



ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[EPA-HQ-OAR-2013-0290 and EPA-HQ-OAR-2013-0291; FRL-9913-58-OAR]

RIN 2060-AP69

**NESHAP for Brick and Structural Clay Products Manufacturing; and
NESHAP for Clay Ceramics Manufacturing**

AGENCY: Environmental Protection Agency.

ACTION: Proposed rule.

SUMMARY: The Environmental Protection Agency (EPA) is proposing national emission standards for hazardous air pollutants (NESHAP) for brick and structural clay products manufacturing and NESHAP for clay ceramics manufacturing. The EPA is proposing that all major sources in these categories meet maximum achievable control technology (MACT) standards for mercury, non-mercury metal hazardous air pollutants (HAP) (or particulate matter (PM) surrogate) and dioxins/furans (Clay Ceramics only); health-based standards for acid gas HAP; and work practice standards, where applicable. The proposed rule, which has been informed by input from industry and other stakeholders, including small businesses, would protect air quality and promote public health by reducing emissions of HAP listed in section 112 of the Clean Air Act (CAA).

DATES: Comments. Comments must be received on or before **[insert date 60 days after the date of publication in the Federal Register]**. A copy of comments on the information collection provisions should be submitted to the Office of Management and Budget (OMB) on or before **[insert date 30 days after the date of publication in the Federal Register]**.

Public Hearing. If anyone contacts the EPA requesting a public hearing by **[INSERT DATE 5 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]** the EPA will hold a public hearing on January 15, 2015, from 1:00 p.m. [Eastern Standard Time] to 5:00 p.m. [Eastern Standard Time] at the U.S. Environmental Protection Agency building located at 109 T.W. Alexander Drive, Research Triangle Park, NC 27711. If the EPA holds a public hearing, the EPA will keep the record of the hearing open for 30 days after completion of the hearing to provide an opportunity for submission of rebuttal and supplementary information.

ADDRESSES: Comments. Submit your comments, identified by Docket

ID No. EPA-HQ-OAR-2013-0291 for Brick and Structural Clay Products Manufacturing and EPA-HQ-OAR-2013-0290 for Clay Ceramics Manufacturing, by one of the following methods:

- Federal eRulemaking Portal: <http://www.regulations.gov>:

Follow the on-line instructions for submitting comments.

- Email: A-and-R-docket@epa.gov. Include Docket ID No. EPA-HQ-OAR-2013-0291 for Brick and Structural Clay Products Manufacturing or EPA-HQ-OAR-2013-0290 for Clay Ceramics Manufacturing in the subject line of the message.
- Fax: (202) 566-9744.
- Mail: Environmental Protection Agency, EPA Docket Center (EPA/DC), Mailcode 28221T, Attention Docket ID No. EPA-HQ-OAR-2013-0291 (for Brick and Structural Clay Products Manufacturing) or EPA-HQ-OAR-2013-0290 (for Clay Ceramics Manufacturing), 1200 Pennsylvania Ave., NW, Washington, DC 20460. In addition, please mail a copy of your comments on the information collection provisions to the Office of Information and Regulatory Affairs, Office of Management and Budget (OMB), Attn: Desk Officer for EPA, 725 17th Street, NW, Washington, DC 20503.
- Hand/Courier Delivery: EPA Docket Center, Room 3334, EPA WJC West Building, 1301 Constitution Ave., NW, Washington, DC 20004. Such deliveries are only accepted during the Docket's normal hours of operation and special arrangements should be made for deliveries of boxed information.

Instructions. Direct your comments to Docket ID No. EPA-HQ-OAR-2013-0291 for Brick and Structural Clay Products Manufacturing or EPA-HQ-OAR-2013-0290 for Clay Ceramics

Manufacturing. The EPA's policy is that all comments received will be included in the public docket without change and may be made available online at <http://www.regulations.gov>, including any personal information provided, unless the comment includes information claimed to be confidential business information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through <http://www.regulations.gov> or email. The <http://www.regulations.gov> Web site is an "anonymous access" system, which means the EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an email comment directly to the EPA without going through <http://www.regulations.gov>, your email address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, the EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD-ROM you submit. If the EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, the EPA may not be able to consider your comment. Electronic files should not include special characters or any form of encryption and be free of any defects or viruses. For additional

information about the EPA's public docket, visit the EPA Docket Center homepage at: <http://www.epa.gov/dockets>.

Docket. The EPA has established dockets for this rulemaking under Docket ID No. EPA-HQ-OAR-2013-0291 for Brick and Structural Clay Products Manufacturing and Docket ID No. EPA-HQ-OAR-2013-0290 for Clay Ceramics Manufacturing. All documents in the dockets are listed in the [regulations.gov](http://www.regulations.gov) index. Although listed in the index, some information is not publicly available, e.g., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy. Publicly available docket materials are available either electronically in [regulations.gov](http://www.regulations.gov) or in hard copy at the EPA Docket Center, EPA WJC West Building, Room 3334, 1301 Constitution Ave., NW, Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744 and the telephone number for the EPA Docket Center is (202) 566-1742.

Public Hearing. If requested by **[INSERT DATE 5 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, we will hold a public hearing on January 15, 2015, from 1:00 p.m. [Eastern Standard Time] to 5:00 p.m. [Eastern Standard Time] at the U.S. Environmental

Protection Agency building located at 109 T.W. Alexander Drive, Research Triangle Park, NC 27711. Please contact Ms. Pamela Garrett of the Sector Policies and Programs Division (D243-01), Office of Air Quality Planning and Standards, Environmental Protection Agency, Research Triangle Park, NC 27711; telephone number: (919) 541-7966; email address: garrett.pamela@epa.gov; to request a hearing, register to speak at the hearing or to inquire as to whether or not a hearing will be held. The last day to pre-register in advance to speak at the hearing will be [INSERT DATE 12 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER]. Additionally, requests to speak will be taken the day of the hearing at the hearing registration desk, although preferences on speaking times may not be able to be fulfilled. If you require the service of a translator or special accommodations such as audio description, we ask that you pre-register for the hearing, as we may not be able to arrange such accommodations without advance notice. The hearing will provide interested parties the opportunity to present data, views or arguments concerning the proposed action. The EPA will make every effort to accommodate all speakers who arrive and register. Because this hearing is being held at a U.S. government facility, individuals planning to attend the hearing should be prepared to show valid picture identification to the security staff in order to gain access to the meeting room. Please note that the REAL ID

Act, passed by Congress in 2005, established new requirements for entering federal facilities. If your driver's license is issued by Alaska, American Samoa, Arizona, Kentucky, Louisiana, Maine, Massachusetts, Minnesota, Montana, New York, Oklahoma or the state of Washington, you must present an additional form of identification to enter the federal building. Acceptable alternative forms of identification include: Federal employee badges, passports, enhanced driver's licenses and military identification cards. In addition, you will need to obtain a property pass for any personal belongings you bring with you. Upon leaving the building, you will be required to return this property pass to the security desk. No large signs will be allowed in the building, cameras may only be used outside of the building and demonstrations will not be allowed on federal property for security reasons. The EPA may ask clarifying questions during the oral presentations, but will not respond to the presentations at that time. Written statements and supporting information submitted during the comment period will be considered with the same weight as oral comments and supporting information presented at the public hearing. Verbatim transcripts of the hearing and written statements will be included in the docket for the rulemaking. The EPA will make every effort to follow the schedule as closely as possible on the day of the hearing; however, please plan for the hearing to

run either ahead of schedule or behind schedule. Again, a hearing will not be held on this rulemaking unless requested. A hearing needs to be requested by [INSERT DATE 5 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]. Again, please contact Ms. Pamela Garrett of the Sector Policies and Programs Division (D243-01), Office of Air Quality Planning and Standards, Environmental Protection Agency, Research Triangle Park, NC 27711; telephone number: (919) 541-7966; email address: garrett.pamela@epa.gov to request a hearing.

FOR FURTHER INFORMATION CONTACT: For questions about the proposed rule for Brick and Structural Clay Products Manufacturing and Clay Ceramics Manufacturing, contact Ms. Sharon Nizich, Minerals and Manufacturing Group, Sector Policies and Program Division (D243-04), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; Telephone number: (919) 541-2825; Fax number: (919) 541-5450; Email address: nizich.sharon@epa.gov.

SUPPLEMENTARY INFORMATION:

Preamble Acronyms and Abbreviations. This preamble includes several acronyms and terms used to describe industrial processes, data inventories and risk modeling. While this list may not be exhaustive, to ease the reading of this preamble and

for reference purposes, the EPA defines the following terms and acronyms here:

3xRDL	representative detection level values multiplied by three
ACI	activated carbon injection
AEGL	Acute Exposure Guideline Level
AERMOD	air dispersion model used by the HEM-3 model
APCD	air pollution control device
ATSDR	Agency for Toxic Substances and Disease Registry
BDL	below detection limit
BLD	bag leak detection
BSCP	brick and structural clay products
CAA	Clean Air Act
CalEPA	California EPA
CAS	Chemical Abstract Services
CBI	Confidential Business Information
CDX	Central Data Exchange
CEDRI	Compliance and Emissions Data Reporting Interface
CFR	Code of Federal Regulations
Cl ₂	chlorine
CO	carbon monoxide
CPMS	continuous parameter monitoring system
DHHS	Department of Health and Human Services
DIFF	dry lime injection fabric filter
DLA	dry limestone adsorber
DLL	detection level limited
DLS/FF	dry lime scrubber/fabric filter
EPA	Environmental Protection Agency
ERPG	Emergency Response Planning Guideline
ERT	Electronic Reporting Tool
°F	degrees Fahrenheit
FF	fabric filter
FTIR	Fourier transform infrared
gr/dscf	grains per dry standard cubic foot
HAP	hazardous air pollutant
HCl	hydrogen chloride
HEM-3	Human Exposure Model (Community and Sector version 1.3.1)
HF	hydrogen fluoride
Hg	mercury
HQ	hazard quotient
IARC	International Agency for Research on Cancer
ICR	information collection request
IOM	Institute of Medicine
IRFA	initial regulatory flexibility analysis

IRIS	Integrated Risk Information System
K	kurtosis statistic
lb/hr	pounds per hour
lb/ton	pounds per ton
LML	lowest measured level
MACT	maximum achievable control technology
mg/m ³	milligrams per cubic meter
MMBtu/yr	million British thermal units per year
MRL	Minimal Risk Level
NAAQS	National Ambient Air Quality Standards
NAICS	North American Industry Classification System
NATA	National Air Toxics Assessment
NEI	National Emissions Inventory
NESHAP	national emissions standards for hazardous air pollutants
ng/dscm	nanograms per dry standard cubic meter
No.	number
NO ₂	nitrogen dioxide
NOAEL	no observable adverse effect level
non-Hg	non-mercury
NO _x	nitrogen oxides
NTTAA	National Technology Transfer and Advancement Act
O ₂	oxygen
OM&M	operation, maintenance and monitoring
OMB	Office of Management and Budget
PIC	products of incomplete combustion
PLC	programmable logic controller
PM	particulate matter
PM _{2.5}	particulate matter with particles less than 2.5 micrometers in diameter
RDL	representative detection level
REL	reference exposure level
RFA	Regulatory Flexibility Act
RfC	reference concentration
RIA	Regulatory Impact Analysis
S	skewness statistic
SBA	Small Business Administration
SBAR	Small Business Advocacy Review
SBE	Standard Brick Equivalent
SBREFA	Small Business Regulatory Enforcement Fairness Act
SEK	standard error of kurtosis
SER	small entity representative
SES	standard error of skewness
SO ₂	sulfur dioxide
SSM	startup, shutdown and malfunction
TCDD	tetrachlorodibenzo-p-dioxin
TEQ	2,3,7,8-TCDD toxic equivalents

TOSHI	target organ-specific hazard index
tph	tons per hour
tpy	tons per year
TTN	Technology Transfer Network
UMRA	Unfunded Mandates Reform Act
µg/dscm	micrograms per dry standard cubic meter
µg/m ³	micrograms per cubic meter
UPL	Upper Prediction Limit
VCS	voluntary consensus standards
VE	visible emissions
WHO	World Health Organization

Organization of This Document. The information in this preamble is organized as follows:

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- A. What source category is affected by the proposed rule?
- B. What are the affected sources?
- C. Does the proposed rule apply to me?
- D. What emission limitations and work practice standards must I meet?
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- G. What are the continuous compliance requirements?
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- A. How did the EPA determine which sources would be regulated under the proposed rule?
- B. How did the EPA select the format for the proposed rule?

- C. How did the EPA consider different subcategories?
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I. General Information

A. Executive Summary

1. Purpose of the Regulatory Action

Section 112(d) of the CAA requires the EPA to set emissions standards for HAP emitted by major stationary sources based on the performance of the MACT. We issued the NESHAP for Brick and Structural Clay Products (BSCP) manufacturing and the NESHAP for Clay Ceramics Manufacturing on May 16, 2003. The two NESHAP were vacated and remanded by the United States Court of Appeals for the District of Columbia Circuit on March 13, 2007. To address the vacatur and remand of the original NESHAP, we are proposing new standards for BSCP manufacturing and clay ceramics manufacturing.

2. Summary of the Major Provisions

BSCP NESHAP. The EPA is proposing MACT emission limits for mercury (Hg) and non-mercury (non-Hg) HAP metals (or PM surrogate) and a health-based emission limit for acid gases (hydrogen fluoride (HF), hydrogen chloride (HCl) and chlorine (Cl₂)) for BSCP tunnel kilns. In addition, the EPA is proposing work practice standards for periodic kilns, for dioxins/furans from tunnel kilns and for periods of startup and shutdown for

tunnel kilns. To demonstrate compliance with the emission limits, the EPA is proposing initial and repeat 5-year performance testing for the regulated pollutants, continuous parameter monitoring and daily visible emissions (VE) checks. Owners/operators whose BSCP tunnel kilns are equipped with a fabric filter (FF) (e.g., dry lime injection fabric filter (DIFF), dry lime scrubber/fabric filter (DLS/FF)) have the option of demonstrating compliance using a bag leak detection (BLD) system instead of daily VE checks.

Clay Ceramics NESHAP. The EPA is proposing MACT emission limits for Hg, PM (surrogate for non-Hg HAP metals) and dioxins/furans and health-based emission limits for acid gases (HF and HCl) for sanitaryware tunnel kilns and ceramic tile roller kilns. In addition, the EPA is proposing MACT emission limits for dioxins/furans for ceramic tile spray dryers and floor tile press dryers, MACT emission limits for Hg and PM (surrogate for non-Hg HAP metals) for ceramic tile glaze lines and MACT emission limits for PM (surrogate for non-Hg HAP metals) for sanitaryware glaze spray booths. The EPA is also proposing work practice standards for shuttle kilns and for periods of startup and shutdown. To demonstrate compliance with the emission limits, the EPA is proposing initial and repeat 5-year performance testing for the regulated pollutants, continuous parameter monitoring and daily VE checks.

Owners/operators whose affected sources are equipped with a FF (e.g., DIFF, DLS/FF) have the option of demonstrating compliance using a BLD system instead of daily VE checks.

3. Costs and Benefits

Table 1 of this preamble summarizes the costs and benefits of this proposed action for 40 CFR part 63, subpart JJJJJ (BSCP Manufacturing NESHAP), while Table 2 of this preamble summarizes the costs of this proposed action for 40 CFR part 63, subpart KKKKK (Clay Ceramics Manufacturing NESHAP). See section VII of this preamble for further discussion of the costs and benefits for the BSCP Manufacturing NESHAP and the costs for the Clay Ceramics Manufacturing NESHAP. See section IX.B of this preamble for discussion of the recordkeeping and reporting costs.

Table 1—Summary of the Costs and Benefits of 40 CFR Part 63, Subpart JJJJJ (millions of 2011 dollars)

Requirement	Capital cost	Annual cost	Net benefit
Emission controls	\$54.9	\$18.4	\$26 to \$99
Emissions testing	\$0.977	\$0.238	
Monitoring	--	\$0.346	

Table 2—Summary of the Costs of 40 CFR Part 63, Subpart KKKKK (millions of 2011 dollars)

Requirement	Capital cost	Annual cost
Emission controls	\$0	\$0
Emissions testing	\$0.102	\$0.0249
Monitoring	--	\$0.0209

B. Does this action apply to me?

The regulated categories and entities potentially affected by the proposed standards are shown in Table 3 of this preamble:

Table 3—NESHAP and Industrial Source Categories Affected by this Proposed Action

Category	NAICS code ^a	Examples of potentially regulated entities
Industry....	327120	Brick, structural clay and extruded tile manufacturing facilities (BSCP NESHAP); and ceramic wall and floor tile manufacturing facilities (Clay Ceramics NESHAP).
	327110	Vitreous plumbing fixtures (sanitaryware) manufacturing facilities (Clay Ceramics NESHAP).
Federal government...	...	Not affected.
State/local/tribal government...	...	Not affected.

^a North American Industry Classification System

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. To determine whether your facility, company, business, organization, etc., would be regulated by this action, you should examine the applicability criteria in 40 CFR 63.8385 of subpart JJJJJ (BSCP Manufacturing NESHAP) or 40 CFR 63.8535 of subpart KKKKK (Clay Ceramics Manufacturing NESHAP). If you have any questions regarding the applicability of this proposed action to a particular entity, contact either the air permitting authority for the entity or your EPA regional

representative as listed in 40 CFR 63.13 of subpart A (General Provisions).

C. Where can I get a copy of this document and other related information?

In addition to being available in the docket, an electronic copy of this action is available on the Internet through the EPA's Technology Transfer Network (TTN) Web site, a forum for information and technology exchange in various areas of air pollution control. Following signature by the EPA Administrator, the EPA will post a copy of this proposed action at <http://www.epa.gov/ttn/atw/brick/brickpg.html>. Following publication in the Federal Register, the EPA will post the Federal Register version of the proposal and key technical documents at this same Web site.

D. What should I consider as I prepare my comments for the EPA?

Do not submit information containing CBI to the EPA through <http://www.regulations.gov> or email. Clearly mark the part or all of the information that you claim to be CBI. For CBI information on a disk or CD-ROM that you mail to the EPA, mark the outside of the disk or CD-ROM as CBI and then identify electronically within the disk or CD-ROM the specific information that is claimed as CBI. In addition to one complete version of the comments that includes information claimed as CBI, you must submit a copy of the comments that does not

contain the information claimed as CBI for inclusion in the public docket. If you submit a CD-ROM or disk that does not contain CBI, mark the outside of the disk or CD-ROM clearly that it does not contain CBI. Information not marked as CBI will be included in the public docket and the EPA's electronic public docket without prior notice. Information marked as CBI will not be disclosed except in accordance with procedures set forth in 40 Code of Federal Regulations (CFR) part 2. Send or deliver information identified as CBI only to the following address: Roberto Morales, OAQPS Document Control Officer (C404-02), OAQPS, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, Attention Docket ID No. EPA-HQ-OAR-2013-0291 (for BSCP Manufacturing NESHAP) or Docket ID No. EPA-HQ-OAR-2013-0290 (for Clay Ceramics Manufacturing NESHAP).

II. Background Information

A. What is the statutory authority for the proposed rule?

Section 112(d) of the CAA requires the EPA to set emissions standards for HAP emitted by major stationary sources based on the performance of the MACT. The MACT standards for existing sources must be at least as stringent as the average emissions limitation achieved by the best performing 12 percent of existing sources (for which the Administrator has emissions information) or the best performing five sources for source categories with less than 30 sources (CAA section 112(d)(3)(A))

and (B)). This level of minimum stringency is called the MACT floor. For new sources, MACT standards must be at least as stringent as the control level achieved in practice by the best controlled similar source (CAA section 112(d)(3)). The EPA also must consider more stringent "beyond-the-floor" control options. When considering beyond-the-floor options, the EPA must consider not only the maximum degree of reduction in emissions of HAP, but must take into account the associated costs, energy and nonair environmental impacts.

B. What is the background for startup, shutdown and malfunction?

In its 2008 decision in Sierra Club v. EPA, 551 F.3d 1019 (D.C. Cir. 2008), the United States Court of Appeals for the District of Columbia Circuit vacated portions of two provisions in the EPA's CAA section 112 regulations governing the emissions of HAP during periods of startup, shutdown and malfunction (SSM). Specifically, the Court vacated the SSM exemption contained in 40 CFR 63.6(f)(1) and 40 CFR 63.6(h)(1), holding that under section 302(k) of the CAA, emissions standards or limitations must be continuous in nature and that the SSM exemption violates the CAA's requirement that some section 112 standards apply continuously.

Consistent with Sierra Club v. EPA, we are proposing standards in this rule that apply at all times. In proposing the standards in this rule, the EPA has taken into account startup

and shutdown periods and, for the reasons explained in sections IV.L and VI.L of this preamble, has proposed alternate standards for some sources during those periods.

Periods of startup, normal operations and shutdown are all predictable and routine aspects of a source's operations. Malfunctions, in contrast, are neither predictable nor routine. Instead they are, by definition sudden, infrequent and not reasonably preventable failures of emissions control, process or monitoring equipment. The EPA interprets CAA section 112 as not requiring emissions that occur during periods of malfunction to be factored into development of CAA section 112 standards. Under section 112, emissions standards for new sources must be no less stringent than the level "achieved" by the best controlled similar source and for existing sources generally must be no less stringent than the average emission limitation "achieved" by the best performing 12 percent of sources in the category. There is nothing in CAA section 112 that directs the agency to consider malfunctions in determining the level "achieved" by the best performing sources when setting emission standards. As the U.S. Court of Appeals for the District of Columbia Circuit has recognized, the phrase "average emissions limitation achieved by the best performing 12 percent of" sources "says nothing about how the performance of the best units is to be calculated."

Nat'l Ass'n of Clean Water Agencies v. EPA, 734 F.3d 1115, 1141

(D.C. Cir. 2013). While the EPA accounts for variability in setting emissions standards, nothing in CAA section 112 requires the agency to consider malfunctions as part of that analysis. A malfunction should not be treated in the same manner as the type of variation in performance that occurs during routine operations of a source. A malfunction is a failure of the source to perform in a "normal or usual manner" and no statutory language compels the EPA to consider such events in setting section CAA 112 standards.

Further, accounting for malfunctions in setting emission standards would be difficult, if not impossible, given the myriad different types of malfunctions that can occur across all sources in the category and given the difficulties associated with predicting or accounting for the frequency, degree and duration of various malfunctions that might occur. For these reasons, the performance of units that are malfunctioning is not "reasonably" foreseeable. See, e.g., Sierra Club v. EPA, 167 F.3d 658, 662 (D.C. Cir. 1999) ("The EPA typically has wide latitude in determining the extent of data-gathering necessary to solve a problem. We generally defer to an agency's decision to proceed on the basis of imperfect scientific information, rather than to 'invest the resources to conduct the perfect study.'") See also, Weyerhaeuser v. Costle, 590 F.2d 1011, 1058 (D.C. Cir. 1978) ("In the nature of things, no general limit,

individual permit, or even any upset provision can anticipate all upset situations. After a certain point, the transgression of regulatory limits caused by 'uncontrollable acts of third parties,' such as strikes, sabotage, operator intoxication or insanity, and a variety of other eventualities, must be a matter for the administrative exercise of case-by-case enforcement discretion, not for specification in advance by regulation."). In addition, emissions during a malfunction event can be significantly higher than emissions at any other time of source operation. For example, if an air pollution control device with 99-percent removal goes off-line as a result of a malfunction (as might happen if, for example, the bags in a baghouse catch fire) and the emission unit is a steady state type unit that would take days to shut down, the source would go from 99-percent control to zero control until the control device was repaired. The source's emissions during the malfunction would be 100 times higher than during normal operations, and the emissions over a 4-day malfunction period would exceed the annual emissions of the source during normal operations. As this example illustrates, accounting for malfunctions could lead to standards that are not reflective of (and significantly less stringent than) levels that are achieved by a well-performing non-malfunctioning source. It is reasonable to interpret CAA section 112 to avoid such a result. The EPA's approach to

malfunctions is consistent with CAA section 112 and is a reasonable interpretation of the statute.

In the event that a source fails to comply with the applicable CAA section 112 standards as a result of a malfunction event, the EPA would determine an appropriate response based on, among other things, the good faith efforts of the source to minimize emissions during malfunction periods, including preventative and corrective actions, as well as root cause analyses to ascertain and rectify excess emissions. The EPA would also consider whether the source's failure to comply with the CAA section 112(d) standard was, in fact, "sudden, infrequent, not reasonably preventable" and was not instead "caused in part by poor maintenance or careless operation." 40 CFR 63.2 (definition of malfunction).

If the EPA determines in a particular case that enforcement action against a source for violation of an emission standard is warranted, the source can raise any and all defenses in that enforcement action and the federal district court will determine what, if any, relief is appropriate. The same is true for citizen enforcement actions. Similarly, the presiding officer in an administrative proceeding can consider any defense raised and determine whether administrative penalties are appropriate.

In summary, the EPA interpretation of the CAA and, in particular, section 112 is reasonable and encourages practices

that will avoid malfunctions. Administrative and judicial procedures for addressing exceedances of the standards fully recognize that violations may occur despite good faith efforts to comply and can accommodate those situations.

C. What is the history of the proposed rule?

Pursuant to CAA section 112(c)(5), the EPA was originally required to promulgate standards for the BSCP Manufacturing and Clay Ceramics Manufacturing source categories by November 2000. The agency initially promulgated standards for these categories in 2003. See 68 FR 26690 (May 16, 2003). Those standards were challenged and subsequently vacated by the Court of appeals for the District of Columbia Circuit in 2007. See Sierra Club v. EPA, 479 F.3d 875, 876 (D.C. Cir. 2007). In 2008, Sierra Club filed suit in the Court of Appeals for the District of Columbia Circuit under CAA section 304(a)(2), alleging that the EPA had a continuing mandatory duty to promulgate standards for these categories under CAA section 112 based on the 2000 deadline under CAA section 112(c)(5). The EPA challenged that claim in a motion to dismiss, arguing that the mandatory duty to act by the 2000 deadline was satisfied by the 2003 rule and that the 2007 vacatur of the 2003 rule did not recreate the statutory duty to act by the 2000 deadline. Ultimately, the District Court found that the vacatur of the 2003 rule recreated the mandatory duty to set standards by 2000 and held that Sierra Club's claims

could continue. See Sierra Club v. EPA, 850 F.Supp.2d 300 (D.D.C. 2012). The EPA and Sierra Club then negotiated a consent decree to settle the litigation and establish proposal and promulgation deadlines for establishing standards for these categories.

Following the 2007 vacatur of the 2003 rule, the EPA began efforts to collect additional data to support new standards for the BSCP and clay ceramics industries. The EPA conducted an initial information collection effort in 2008 to update information on the inventory of affected units, hereafter referred to as "the 2008 EPA survey." The EPA conducted a second information collection effort in 2010 to obtain additional emissions data and information on each facility's SSM procedures, hereafter referred to as "the 2010 EPA survey." The information collected as part of these surveys and not claimed as CBI by respondents is available in Docket ID Nos. EPA-HQ-OAR-2013-0290 and EPA-HQ-OAR-2013-0291. In addition, the dockets A-99-30 and OAR-2002-0054 are incorporated by reference for BSCP. The dockets A-2000-48, OAR-2002-0055 and EPA-HQ-OAR-2006-0424 are incorporated by reference for clay ceramics.

D. What are the health effects of pollutants emitted from the Brick and Structural Clay Products Manufacturing and Clay Ceramics Manufacturing source categories?

The proposed rule protects air quality and promotes the public health by reducing emissions of HAP emitted from BSCP and clay ceramics kilns. Emissions data collected during development of the proposed rule shows that acid gases such as HF, HCl and Cl₂ represent the predominant HAP emitted by BSCP and clay ceramics kilns, accounting for 99.3 percent of the total HAP emissions. These kilns also emit lesser amounts of other HAP compounds such as HAP metals and dioxins/furans, accounting for about 0.7 percent of total HAP emissions. The HAP metals emitted include antimony, arsenic, beryllium, cadmium, chromium, cobalt, lead, manganese, mercury, nickel and selenium. Exposure to these HAP, depending on exposure duration and levels of exposures, can be associated with a variety of adverse health effects. These adverse health effects could include chronic health disorders (e.g., irritation of the lung, skin and mucus membranes, effects on the central nervous system and damage to the kidneys) and acute health disorders (e.g., lung irritation and congestion, alimentary effects such as nausea and vomiting and effects on the kidney and central nervous system). We have classified two of the HAP as human carcinogens (arsenic and chromium VI) and

four as probable human carcinogens (cadmium, lead, dioxins/furans and nickel).

III. Summary of the Proposed Rule for the Brick and Structural Clay Products Manufacturing Source Category

This section summarizes the requirements for the BSCP Manufacturing source category proposed in today's action. Section IV of this preamble provides our rationale for the proposed requirements.

A. What source category is affected by the proposed rule?

Today's proposed rule for BSCP Manufacturing applies to BSCP manufacturing facilities that are located at or are part of a major source of HAP emissions. The BSCP Manufacturing source category includes those facilities that manufacture brick (face brick, structural brick, brick pavers and other brick); clay pipe; roof tile; extruded floor and wall tile; and/or other extruded, dimensional clay products.

B. What are the affected sources?

The affected sources, which are the portions of each source in the category for which we are setting standards, are: (1) all tunnel kilns at a BSCP manufacturing facility; and (2) each periodic kiln. For purposes of this proposed BSCP manufacturing rule, tunnel kilns are defined to include any type of continuous kiln used at BSCP manufacturing facilities, including roller kilns.

Tunnel kilns are fired by natural gas or other fuels, including sawdust. Sawdust firing typically involves the use of a sawdust dryer because sawdust typically is purchased wet and needs to be dried before it can be used as fuel. Consequently, some sawdust-fired tunnel kilns have two process streams, including: (1) a process stream that exhausts directly to the atmosphere or to an APCD and (2) a process stream in which the kiln exhaust is ducted to a sawdust dryer where it is used to dry sawdust before being emitted to the atmosphere. Both process streams are subject to the requirements of today's proposed BSCP manufacturing rule.

The following BSCP process units are not subject to the requirements of today's proposed rule: (1) kilns that are used exclusively for setting glazes on previously fired products and (2) dryers. See section IV.A of this preamble for information on why these sources are not subject to the proposed BSCP manufacturing rule.

C. Does the proposed rule apply to me?

This proposed BSCP manufacturing rule applies to owners or operators of an affected source at a major source meeting the requirements discussed previously in this preamble. A major source of HAP emissions is any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit,

considering controls, 10 tons per year (tpy) or more of any HAP or 25 tpy or more of any combination of HAP.

D. What emission limitations and work practice standards must I meet?

1. Emission Limitations

We are proposing a choice of emission limits for total non-Hg HAP metals for all new and existing tunnel kilns. The options include a total non-Hg HAP metals limit (pounds per hour (lb/hr)) and options for limiting PM as a surrogate for non-Hg HAP metals (pounds per ton (lb/ton) or grains per dry standard cubic foot (gr/dscf) at 7 percent oxygen (O₂)). We are also proposing a choice of emission limits for Hg (lb/ton, lb/hr or micrograms per dry standard cubic meter (µg/dscm) at 7 percent O₂) for new and existing tunnel kilns in two subcategories based on kiln size. In this proposed BSCP manufacturing rule, a large tunnel kiln is defined as a new or existing tunnel kiln with a design capacity of 10 tons per hour (tph) or greater and a small tunnel kiln is defined as a new or existing tunnel kiln with a design capacity of less than 10 tph. We are also proposing an emission limit for HCl-equivalent for all existing and new tunnel kilns at the facility to reduce the acid gases HF, HCl and Cl₂. The proposed emission limits for Hg and non-Hg HAP metals are presented in Table 4 of this preamble.

**Table 4—Proposed Total Non-Mercury HAP Metals and Mercury
Emission Limits for Brick and Structural Clay Products Tunnel
Kilns**

Subcategory	Acid gases	Total non-Hg HAP metals	Hg
Limits for existing sources			
Large tunnel kilns (≥ 10 tph)	--	--	2.2 E-05 lb/ton OR 2.7 E-04 lb/hr OR 29 µg/dscm at 7- percent O ₂ for each existing large tunnel kiln at facility
Small tunnel kilns (< 10 tph)	--	--	2.0 E-04 lb/ton OR 0.0011 lb/hr OR 70 µg/dscm at 7- percent O ₂ for each existing small tunnel kiln at facility
All tunnel kilns	57 lb/hr HCl- equivalent for collection of all existing tunnel kilns at facility	0.16 lb/ton PM OR 0.040 gr/dscf PM at 7 percent O ₂ OR 0.023 lb/hr non-Hg HAP metals for each existing tunnel kiln at facility	--
Limits for new sources			
Large tunnel kilns (≥ 10 tph)	--	--	2.0 E-05 lb/ton OR 2.4 E-04 lb/hr OR 13 µg/dscm at 7- percent O ₂ for each new large tunnel kiln at facility
Small tunnel kilns (< 10 tph)	--	--	2.0 E-04 lb/ton OR 0.0011 lb/hr OR 70 µg/dscm at 7- percent O ₂ for each new small tunnel kiln at facility
All tunnel kilns	57 lb/hr HCl- equivalent for collection of all new tunnel kilns at facility	0.022 lb/ton PM OR 0.0066 gr/dscf PM at 7-percent O ₂ OR 0.0032 lb/hr non-Hg HAP metals for each new tunnel kiln at facility	--

2. Work Practice Standards

We are proposing work practice standards for BSCP periodic kilns in lieu of HAP emission limits. The work practice standards would require developing and using a designed firing time and temperature cycle for each product produced in the periodic kiln; labeling each periodic kiln with the maximum load (in tons) that can be fired in the kiln during a single firing cycle; documenting the total tonnage placed in the kiln for each load to ensure that it is not greater than the maximum load; developing and implementing maintenance procedures for each kiln that specify the frequency of inspection and maintenance; and developing and maintaining records for each periodic kiln, including logs to document the proper operation and maintenance procedures of the periodic kilns.

We are also proposing work practice standards for BSCP tunnel kilns in lieu of dioxin/furan emission limits. The work practice standards would require maintaining and inspecting the burners and associated combustion controls (as applicable); tuning the specific burner type to optimize combustion; keeping records of each burner tune-up; and submitting a report for each tune-up conducted.

E. What are the startup and shutdown requirements?

The EPA's position on SSM events is discussed in section II.B of this preamble. Standards for periods of startup and shutdown are discussed in this section.

We are proposing the work practice standards described in this paragraph for periods of startup and shutdown for BSCP tunnel kilns with APCD. For startup, the owner or operator would be required to vent the exhaust from the kiln through the APCD by the time the kiln exhaust temperature reaches 400 degrees Fahrenheit (°F). In addition, no bricks or other product may be introduced to the kiln until the kiln exhaust temperature reaches 400 °F and the exhaust is being vented through the APCD. For shutdown, the owner or operator would be required to vent the exhaust from the kiln through the APCD until the kiln exhaust temperature falls below 300 °F. In addition, no bricks or other product may be put into the kiln once the kiln exhaust temperature falls to 300 °F and the exhaust is no longer being vented through the APCD. When the kiln exhaust is being vented through the APCD, the owner or operator would be required to comply with the applicable continuous compliance requirements described in section III.G of this preamble.

We are proposing work practice standards for periods of startup and shutdown for BSCP tunnel kilns without an APCD as well. For startup, no bricks or other product may be introduced

to the kiln until the kiln exhaust temperature reaches 400 °F. For shutdown, no bricks or other product may be put into the kiln once the kiln exhaust temperature falls to 300 °F.

F. What are the testing and initial compliance requirements?

We are proposing that owners or operators of all affected sources subject to emission limits conduct an initial performance test using specified EPA test methods to demonstrate initial compliance with all applicable emission limits. A performance test would have to be conducted before renewing the facility's 40 CFR part 70 operating permit or at least every five years following the initial performance test, as well as when an operating limit parameter value is being revised.

Under today's proposed BSCP manufacturing rule, the owner or operator would have to measure emissions of HF, HCl, Cl₂, Hg and PM (or non-Hg HAP metals). We are proposing that the owner or operator measure HF, HCl and Cl₂ using one of the following methods:

- EPA Method 26A, "Determination of Hydrogen Halide and Halogen Emissions from Stationary Sources-Isokinetic Method," 40 CFR part 60, appendix A-8;
- EPA Method 26, "Determination of Hydrogen Chloride Emissions from Stationary Sources," 40 CFR part 60, appendix A-8, when no acid particulate (e.g., HF, HCl or Cl₂ dissolved in water droplets emitted by sources controlled by a wet scrubber) is present;
- EPA Method 320, "Measurement of Vapor Phase Organic and Inorganic Emission by Extractive FTIR" 40 CFR part 63, appendix A, provided the test follows the analyte spiking procedures of section 13 of Method 320, unless the owner or

operator can demonstrate that the complete spiking procedure has been conducted at a similar source; or

- Any other alternative method that has been approved by the Administrator under 40 CFR 63.7(f) of the General Provisions.

Following the performance test, the owner or operator would calculate the HCl-equivalent for the kiln using proposed Equation 2 in 40 CFR 63.8445(f)(2)(i). If there are multiple kilns at a facility, the owner or operator would sum the HCl-equivalent for each kiln using proposed Equation 3 in 40 CFR 63.8445(f)(2)(ii) to get the total facility HCl-equivalent and compare this value to the proposed limitation.

If the owner or operator chooses to comply with one of the two PM emission limits, we are proposing that the owner or operator measure PM emissions using one of the following methods:

- EPA Method 5, "Determination of Particulate Emissions from Stationary Sources," 40 CFR part 60, appendix A-3;
- EPA Method 29, "Determination of Metals Emissions From Stationary Sources," 40 CFR part 60, appendix A-8, where the test results would report the weight of the PM on the filter as PM filterable; or
- Any other alternative method that has been approved by the Administrator under 40 CFR 63.7(f) of the General Provisions.

If the owner or operator chooses to comply with the non-Hg HAP metals emission limit instead of one of the PM emission limits, the owner or operator would measure non-Hg HAP metals emissions using EPA Method 29 cited above or any other alternative method that has been approved by the Administrator

under 40 CFR 63.7(f) of the General Provisions. The owner or operator may also use Method 29 or any other approved alternative method to measure Hg emissions.

The following paragraphs discuss the initial compliance requirements that we are proposing. Prior to the initial performance test, the owner or operator would need to install the continuous parameter monitoring system (CPMS) equipment to be used to demonstrate continuous compliance with the operating limits. During the initial test, the owner or operator would use the CPMS to establish site-specific operating parameter values that represent the operating limits.

For a DIFF or DLS/FF, we are proposing that the owner or operator ensure that lime in the feed hopper or silo and to the APCD is free-flowing at all times during the HF/HCl/Cl₂ performance test and record the feeder setting (on a per ton of fired product basis) for the three test runs. If the lime feed rate varies, the owner or operator would be required to determine the average feed rate from the three test runs. The average of the three test runs establishes the minimum site-specific feed rate operating limit. If there are different average feed rate values during the PM/non-Hg HAP metals and HF/HCl/Cl₂ tests, the highest of the average values becomes the site-specific operating limit. If a BLD system is present, the owner or operator would need to submit analyses and supporting

documentation demonstrating conformance with EPA guidance and specifications for BLD systems.

For a stand-alone FF (i.e., no dry sorbent injection or DLS) and a BLD system, we are proposing that the owner or operator submit analyses and supporting documentation demonstrating conformance with EPA guidance and specifications for BLD systems.

For a dry limestone adsorber (DLA), we are proposing that the owner or operator continuously measure the pressure drop across the DLA during the HF/HCl/Cl₂ performance test and determine the 3-hour block average pressure drop. The average of the three test runs establishes the minimum site-specific pressure drop operating limit. Alternatively, the owner or operator may continuously monitor the bypass stack damper position at least once every 15 minutes during the performance test. The owner or operator also would need to maintain an adequate amount of limestone in the limestone hopper, storage bin (located at the top of the DLA) and DLA at all times. In addition, the owner or operator would need to establish the limestone feeder setting (on a per ton of fired product basis) 1 week prior to the performance test and maintain the feeder setting for the 1-week period that precedes the performance test and during the performance test. Finally, the owner or operator

would need to document the source and grade of the limestone used during the performance test.

For a wet scrubber, we are proposing that the owner or operator continuously measure the scrubber pressure drop during the PM/non-Hg HAP metals performance test, the scrubber liquid pH and chemical addition rate (if applicable) during the HF/HCl/Cl₂ performance test and the scrubber liquid flow rate during both the PM/non-Hg HAP metals and HF/HCl/Cl₂ performance tests. For each wet scrubber parameter, the owner or operator would need to determine and record the average values for the three test runs and the 3-hour block average value. The average of the three test runs establishes the minimum site-specific pressure drop, liquid pH, liquid flow rate and chemical addition rate operating limits. If different average wet scrubber liquid flow rate values are measured during the PM/non-Hg HAP metals and HF/HCl/Cl₂ tests, the highest of the average values become the site-specific operating limit.

For an activated carbon injection (ACI) system, we are proposing that the owner or operator measure the activated carbon flow rate during the Hg performance test and determine the 3-hour block average flow rate. The average of the three test runs establishes the minimum site-specific activated carbon flow rate operating limit.

For a source with no APCD installed, we are proposing that the owner or operator calculate the maximum potential HCl-equivalent using proposed Equation 4 in 40 CFR 63.8445(g)(1)(i). The owner or operator would use the results from the performance test to determine the emissions at the maximum possible process rate. For example, if the design capacity of the kiln is 10 tph and the production rate during the performance test was 9 tph, then the test results represent 90 percent of the maximum potential emissions. If there are multiple kilns at a facility, the owner or operator would need to sum the maximum potential HCl-equivalent for each kiln to get the total facility maximum potential HCl-equivalent and compare this value to the proposed health-based emission limitation for acid gases. If the total facility maximum potential HCl-equivalent is greater than the proposed limitation, we are proposing that the owner or operator determine the maximum process rate for which the total facility maximum potential HCl-equivalent remains at or below the proposed limitation. If there are multiple kilns, the owner or operator would need to determine one or more combinations of maximum process rates that would result in a total facility maximum potential HCl-equivalent remains at or below the proposed limitation. The maximum process rate(s) would become the operating limit(s) for process rate.

G. What are the continuous compliance requirements?

Today's BSCP manufacturing rule proposes that the owner or operator demonstrate continuous compliance with each emission limitation that applies. The owner or operator would have to follow the requirements in the operation, maintenance and monitoring (OM&M) plan and document conformance with the OM&M plan. The owner or operator would need to operate a CPMS to monitor the operating parameters established during the initial performance test as described in the following paragraphs. The CPMS would have to collect data at least every 15 minutes, including at least three of four equally spaced data values (or at least 75 percent if there are more than four data values per hour) per hour to have a valid hour of data. The owner or operator would have to operate the CPMS at all times when the process is operating. The owner or operator would also have to conduct proper maintenance of the CPMS (including inspections, calibrations and validation checks) and maintain an inventory of necessary parts for routine repairs of the CPMS. Using the recorded readings, the owner or operator would need to calculate and record the 3-hour block average values of each operating parameter. To calculate the average for each 3-hour averaging period, the owner or operator would need to have at least 75 percent of the recorded readings for that period.

For a DIFF or DLS/FF, we are proposing that the owner or operator demonstrate compliance with the acid gas (HF/HCl/Cl₂) health-based emission limit by maintaining free-flowing lime in the feed hopper or silo and to the APCD at all times. If lime is not flowing freely, according to load cell output, carrier gas/lime flow indicator, carrier gas pressure drop measurement system or other system, the owner or operator would have to promptly initiate and complete corrective actions according to the OM&M plan. The owner or operator would also have to maintain the feeder setting (on a per ton of fired product basis) at or above the level established during the HF/HCl/Cl₂ performance test and record the feeder setting once each shift.

The proposed rule would provide the option to use either a BLD system or VE monitoring to demonstrate compliance with the PM/non-Hg HAP metals emission limit.

For the option of a BLD system, we are proposing that the owner or operator initiate corrective action within 1 hour of a BLD system alarm and complete corrective actions according to the OM&M plan. The owner or operator would also need to operate and maintain the FF such that the alarm is not engaged for more than 5 percent of the total operating time in a 6-month block reporting period. In calculating this operating time fraction, the owner or operator would not count any alarm time if inspection of the FF demonstrates that no corrective action is

required. If corrective action is required, the owner or operator must count each alarm as a minimum of 1 hour. If corrective action is initiated more than 1 hour after an alarm, the owner or operator must count as alarm time the actual amount of time taken to initiate corrective action.

For the option of monitoring VE, we are proposing that the owner or operator perform daily, 15-minute VE observations in accordance with the procedures of EPA Method 22, "Visual Determination of Fugitive Emissions from Material Sources and Smoke Emissions from Flares," 40 CFR part 60, appendix A-7. During the VE observations, the kiln would need to be operating under normal conditions. If VE are observed, the owner or operator would have to promptly initiate and complete corrective actions according to the OM&M plan. If no VE are observed in 30 consecutive daily EPA Method 22 tests, the owner or operator may decrease the frequency of EPA Method 22 testing from daily to weekly for that kiln stack. If VE are observed during any weekly test, the owner or operator would have to promptly initiate and complete corrective actions according to the OM&M plan and the owner or operator would need to resume EPA Method 22 testing of that kiln stack on a daily basis until no VE are observed in 30 consecutive daily tests, at which time the owner or operator may again decrease the frequency of EPA Method 22 testing to a weekly basis.

For a stand-alone FF, we are proposing that the owner or operator use a BLD system or monitor VE as described above to demonstrate compliance with the PM/non-Hg HAP metals emission limit.

For a DLA, we are proposing that the owner or operator demonstrate compliance with the acid gas (HF/HCl/Cl₂) health-based emission limit by collecting and recording data documenting the DLA pressure drop and reducing the data to 3-hour block averages. The owner or operator would need to maintain the average pressure drop across the DLA for each 3-hour block period at or above the average pressure drop established during the HF/HCl/Cl₂ performance test.

Alternatively, the owner or operator may continuously monitor the bypass stack damper position at least once every 15 minutes during normal kiln operation. Any period in which the bypass damper is opened allowing the kiln exhaust gas to bypass the DLA would trigger corrective actions according to the OM&M plan. The owner or operator also would need to verify that the limestone hopper, storage bin (located at the top of the DLA) and DLA contain an adequate amount of limestone by performing a daily visual check of the limestone hopper and the storage bin. A daily visual check could include one of the following: (1) conducting a physical check of the hopper; (2) creating a visual access point, such as a window, on the side of the hopper; (3)

installing a camera in the hopper that provides continuous feed to a video monitor in the control room; or (4) confirming that load level indicators in the hopper are not indicating the need for additional limestone. If the hopper or storage bin does not contain adequate limestone, the owner or operator would have to promptly initiate and complete corrective actions according to the OM&M plan. The owner or operator also would have to record the limestone feeder setting daily (on a per ton of fired product basis) to verify that the feeder setting is being maintained at or above the level established during the HF/HCl/Cl₂ performance test. The owner or operator also would need to use the same grade of limestone from the same source as was used during the HF/HCl/Cl₂ performance test and maintain records of the source and type of limestone. Finally, the owner or operator would need to monitor VE, as described in the previous paragraph.

For a wet scrubber, we are proposing that the owner or operator continuously maintain the 3-hour block averages for scrubber pressure drop, scrubber liquid pH, scrubber liquid flow rate and chemical addition rate (if applicable) at or above the minimum values established during the applicable performance test. Maintaining the 3-hour block average for scrubber pressure drop at or above the minimum value established during the PM/non-Hg HAP metals performance test would demonstrate

compliance with the PM/non-Hg HAP metals emission limit. Maintaining the 3-hour block average for scrubber liquid pH and chemical (e.g., lime, caustic) addition rate at or above the minimum values established during the HF/HCl/Cl₂ performance test would demonstrate compliance with the acid gas (HF/HCl/Cl₂) health-based emission limit. Maintaining the 3-hour block average for scrubber liquid flow rate at or above the lowest minimum value established during the PM/non-Hg HAP metals and HF/HCl/Cl₂ performance tests would demonstrate compliance with all applicable emission limits by showing that the scrubber is in proper working order.

For an ACI system, we are proposing that the owner or operator demonstrate compliance with the Hg emission limit by continuously monitoring the activated carbon flow rate and maintaining it at or above the operating limit established during the Hg performance test.

For sources with no APCD, we are proposing that the owner or operator monitor VE as described above to demonstrate compliance with the PM/non-Hg HAP metals emission limit. In addition, if the last calculated total facility maximum potential HCl-equivalent was not at or below the proposed health-based emission limitation for acid gases, then we are proposing that the owner or operator collect and record data documenting the process rate of the kiln and reduce the data to

3-hour block averages. The owner or operator would need to maintain the kiln process rate at or below the kiln process rate operating limit(s) that would enable the total facility maximum potential HCl-equivalent to remain at or below the proposed limitation.

H. What are the notification, recordkeeping and reporting requirements?

All new and existing sources would be required to comply with certain requirements of the General Provisions (40 CFR part 64, subpart A), which are identified in proposed Table 8 of 40 CFR part 64, subpart JJJJJ. The General Provisions include specific requirements for notifications, recordkeeping and reporting.

Each owner or operator would be required to submit a notification of compliance status report, as required by 40 CFR 63.9(h) of the General Provisions. This proposed BSCP manufacturing rule would require the owner or operator to include in the notification of compliance status report certifications of compliance with rule requirements. Semiannual compliance reports, as required by 40 CFR 63.10(e)(3) of subpart A, would also be required for each semiannual reporting period.

This proposed BSCP manufacturing rule would require records to demonstrate compliance with each emission limit and work practice standard. These recordkeeping requirements are

specified directly in the General Provisions to 40 CFR part 63 and are identified in proposed Table 8 of subpart JJJJJ.

Specifically, we are proposing that the owner or operator keep the following records:

- All reports and notifications submitted to comply with this proposed BSCP manufacturing rule.
- Records of performance tests.
- Records relating to APCD maintenance and documentation of approved routine control device maintenance exemption.
- Continuous monitoring data as required in this proposed BSCP manufacturing rule.
- Records of BLD system alarms and corrective actions taken.
- Records of each instance in which the owner or operator did not meet each emission limit (i.e., deviations from operating limits).
- Records of production rates.
- Records of approved alternative monitoring or testing procedures.
- Records of maintenance and inspections performed on the APCD.
- Current copies of the OM&M plan and records documenting conformance.
- Logs of the information required to document compliance with the periodic kiln work practice standard.
- Records of burner tune-ups used to comply with the dioxin/furan work practice standard for tunnel kilns.
- Logs of the information required to document compliance with the startup and shutdown work practice standards.
- Records of each malfunction and the corrective action taken.

We are also proposing that the owner or operator submit the following reports and notifications:

- Notifications required by the General Provisions.
- Initial Notification no later than 120 calendar days after the affected source becomes subject to this subpart.
- Notification of Intent to conduct performance tests and/or other compliance demonstration at least 60 calendar days

before the performance test and/or other compliance demonstration is scheduled.

- Notification of Compliance Status 60 calendar days following completion of a compliance demonstration that includes a performance test.
- Notification of Compliance Status 30 calendar days following completion of a compliance demonstration that does not include a performance test (i.e., compliance demonstrations for the work practice standards).
- Compliance reports semi-annually, including a report of the most recent burner tune-up conducted to comply with the dioxin/furan work practice standard and a report of each malfunction resulting in an exceedance and the corrective action taken.
- Results of each performance test within 60 days of completing the test, submitted to the EPA by direct computer-to-computer electronic transfer via EPA-provided software for data collected using supported test methods.

I. How would I submit emissions test results to the EPA?

In this proposal, the EPA is describing a process to increase the ease and efficiency of performance test data submittal while improving data accessibility. Specifically, the EPA is proposing that owners and operators of BSCP manufacturing facilities submit electronic copies of required performance test reports by direct computer-to-computer electronic transfer using EPA-provided software. The direct computer-to-computer electronic transfer is accomplished through the EPA's Central Data Exchange (CDX) using the Compliance and Emissions Data Reporting Interface (CEDRI). The CDX is the EPA's portal for submittal of electronic data. The EPA-provided software is called the Electronic Reporting Tool (ERT), which generates electronic reports of performance tests and evaluations. The ERT

report package will be submitted using the CEDRI. The submitted report package will be stored in the CDX archive (the official copy of record) and the EPA's public database called WebFIRE. All stakeholders will have access to all reports and data in WebFIRE via the WebFIRE Report Search and Retrieval link (<http://cfpub.epa.gov/webfire/index.cfm?action=fire.searchERTSubmission>). A description and instructions for use of the ERT can be found on the ERT Web site (<http://www.epa.gov/ttn/chief/ert/index.html>), and CEDRI can be accessed through the CDX Web site (www.epa.gov/cdx).

The proposal to submit performance test data electronically to the EPA applies only to those performance tests conducted using test methods that are supported by the ERT at the time of the test. The ERT supports most of the commonly used EPA reference methods. A listing of the pollutants and test methods supported by the ERT is available on the ERT Web site.

We believe that the electronic submittal of reports increases the usefulness of the data contained in those reports, is in keeping with current trends in data availability and may ultimately result in less burden on the regulated community. Electronic reporting can eliminate paper-based, manual processes, thereby saving time and resources, simplifying data entry, eliminating redundancies and providing data quickly and

accurately to the affected sources, air agencies, the EPA and the public.

By making data readily available, electronic reporting increases the amount of data that can be used for the development of emission factors. The EPA has received feedback from stakeholders asserting that many of the EPA's emission factors are outdated or not representative of a particular industry emission source. While the EPA believes that the emission factors are suitable for their intended purpose, we also recognize that emissions profiles on different pieces of equipment can change over time due to a number of factors (fuel changes, equipment improvements, industry work practices), and it is important for emission factors to be updated to keep up with these changes. The EPA is currently pursuing emission factor development improvements that include procedures to incorporate the source test data that we are proposing be submitted electronically.

Emission factors are used in the development of emissions inventories, and improved emission factors means that the quality of these inventories will be improved more quickly than they would under the current paper reporting requirements. Emissions inventories are used for tracking emission trends and identifying potential sources of emissions for reduction. For example, the EPA's National Air Toxics Assessment (NATA) uses

the EPA's National Emissions Inventory (NEI) in its screening level assessments to characterize the nationwide chronic cancer risk estimates and noncancer hazards from inhaling air toxics. The NATA is used as a screening tool for air agencies to prioritize pollutants, emission sources and locations of interest for further study to gain a better understanding of risks. Therefore, improving the quality of these inventories is an on-going goal for the agency and a benefit to the public, air agencies and the regulated community.

Additionally, the EPA, the regulated community and the public may benefit from electronic reporting when the EPA conducts its CAA-required technology and risk-based reviews. Because we will already have access to these reports, our ability to do comprehensive reviews will be increased and achieved within a shorter period of time. Under an electronic reporting system, the EPA would have performance test data in hand; thus, it is possible that fewer or less substantial information collection requests (ICRs) in conjunction with prospective CAA-required technology and risk-based reviews may be needed. This may result in a decrease in the need for industry staff time to respond to data collection requests. It may also allow the EPA to conduct these required reviews more quickly, as we will not have to include the ICR collection time in the process. While the regulated community may benefit from

reduced ICRs, the general public benefits from the agency's ability to conduct these required reviews more quickly.

Electronic reporting could minimize submission of unnecessary or duplicative reports in cases where facilities report to multiple government agencies and the agencies opt to rely on the EPA's electronic reporting system to view report submissions. Where air agencies continue to require a paper copy of these reports and will accept a hard copy of the electronic report, facilities will have the option to print paper copies of the electronic reporting forms to submit to the air agencies, thus minimizing the time spent reporting to multiple agencies. Additionally, maintenance and storage costs associated with retaining paper records could likewise be minimized by replacing those records with electronic records of electronically submitted data and reports.

There are benefits of information that is submitted in a standardized format. Standardizing the reporting format will require the reporting of specific data elements, thereby helping to ensure completeness of the data and allowing for accurate assessment of data quality. Additionally, imbedded quality assurance checks will perform some of the required method calculations, reducing errors in test reports. And because the system is entirely electronic, it eliminates transcription errors in moving data from paper reports to data systems for

analysis. These quality assurance checks and procedures will increase the accuracy of test report data, improve the overall quality of test data, and lead to more accurate emission factors and higher quality emissions inventories. These features benefit all users of the data.

Air agencies could benefit from more streamlined and automated review of the electronically submitted data. For example, because the performance test data would be readily-available in a standard electronic format, air agencies would be able to review reports and data electronically rather than having to conduct a review of the reports and data manually. Having reports and associated data in electronic format will facilitate review through the use of software "search" options, as well as the downloading and analyzing of data in spreadsheet format. Additionally, air agencies would benefit from the reported data being accessible to them through the EPA's electronic reporting system whenever they want or need access (as long as they have access to the Internet). The ability to access and review information electronically will assist air agencies in more quickly determining compliance with emission standards. This benefits both air agencies and the general public.

The general public would also benefit from electronic reporting of emissions data because the data would be available

for viewing sooner and would be easier for the public to access. The EPA Web site that stores the submitted electronic data is easily accessible to the public and provides a user-friendly interface that any stakeholder could access.

In summary, in addition to supporting regulation development, control strategy development and other air pollution control activities, having an electronic database populated with performance test data would save industry, air agencies and the EPA significant time, money and effort while also improving the quality of emission inventories and air quality regulations.

IV. Rationale for the Proposed Rule for Brick and Structural Clay Products Manufacturing

A. How did the EPA determine which sources would be regulated under the proposed rule?

In the BSCP manufacturing industry, the primary sources of HAP emissions are kilns, including tunnel kilns and periodic kilns. The HAP emitted from BSCP kilns include HF, HCl, Cl₂, Hg and other non-Hg HAP metals. At one time, dryers were a potential source of HF, HCl, Cl₂ and non-Hg HAP metals emissions, but the design and operation of kilns and dryers has changed such that emissions released from the heating of the raw materials and the products of combustion no longer pass from the kiln into the dryer. In addition, the 2010 EPA survey requested

that owners/operators of specific dryers test for dioxins/furans, and none of the tests found detectable levels of dioxins/furans. See the technical memorandum "Determination of "Non-Detect" Test Data for the BSCP Proposed Rule" in Docket ID No. EPA-HQ-OAR-2013-0291. Other process units at BSCP manufacturing facilities (e.g., raw material processing and handling) have not been found to emit measurable quantities of HAP. For this reason, the proposed rule covers existing and new kilns at major source BSCP manufacturing facilities which meet the applicability criteria in the rule.

BSCP kilns that do not meet the applicability criteria include kilns that are used exclusively for setting glazes on previously fired products. Nearly all of the acid gas emissions from the firing of BSCP products are released during the initial firing, so kilns that are used exclusively for setting glazes on previously fired products emit little to no HF, HCl or Cl₂.

B. How did the EPA select the format for the proposed rule?

For Hg and total non-Hg HAP metals, this proposed BSCP manufacturing rule provides owners and operators of regulated sources with a choice between a numerical emission rate limit as a mass of pollutant emitted per ton of bricks produced and a numerical emission limit in units of concentration. The selection of numerical emission rate limits and numerical emission limits as the format for this proposed BSCP

manufacturing rule provides flexibility for the regulated community by allowing a regulated source to choose any control technology or technique to meet the emission limits, rather than requiring each unit to use a prescribed control method that may not be appropriate in each case. In addition, the selection of numerical emission rate limits as mass of pollutant emitted per ton of bricks produced ensures that differences in kiln sizes or production rates do not affect the level of emissions control achieved.

The PM limits are proposed as a surrogate for non-Hg HAP metals. The same control techniques that would be used to control PM will control non-Hg HAP metals. Particulate matter was also chosen instead of requiring control of specific individual HAP metals because all kilns do not emit the same type and amount of HAP metals due to differences in raw materials and fuels used to fire the kilns. However, most kilns generally emit PM that includes some amount and combination of HAP metals. The use of PM as a surrogate will also eliminate the cost of performance testing needed to comply with numerous standards for individual non-Hg HAP metals. We have used PM as a surrogate for non-Hg HAP metals NESHAP for other rules with similar processes (e.g., Portland Cement Manufacturing, Lime Manufacturing).

Although we continue to believe that PM is a good surrogate for non-Hg HAP metals and that complying with a PM emission limit rather than non-Hg HAP metals limits will be less costly for most kilns, we understand that some owners and operators may find that meeting a total non-Hg HAP metals limit is less costly than meeting a PM limit. To provide that flexibility, we have developed an alternative compliance option of a numerical emission rate limit for total non-Hg HAP metals as a mass of pollutant emitted per hour. The ability to comply with this limit would provide additional flexibility for small tunnel kilns and tunnel kilns with a low metals content in the PM emissions and would achieve equivalent emission reductions to the options to limit PM.

For acid gases (HF, HCl and Cl₂), this proposed BSCP manufacturing rule includes a health-based emission limit as a mass of HCl-equivalent emitted per hour. Further discussion about the development of the health-based standard for the proposed BSCP manufacturing rule is provided in section IV.J of this preamble.

This proposed BSCP manufacturing rule includes work practices for dioxins/furans from tunnel kilns. As described in more detail in section IV.K.2 of this preamble, 83 percent of the dioxin/furan data collected during the ICR process were below the detection level and it is not practicable due to

technological and economic limitations to apply measurement methodology to test for compliance with a numerical limit.

This proposed BSCP manufacturing rule also includes work practices for periodic kilns. As described in more detail in section IV.K.1 of this preamble, technological and economic limitations make it impracticable to measure compliance with numerical emission limits for BSCP periodic kilns.

C. How did the EPA consider different subcategories?

Section 112(d)(1) of the CAA allows the EPA to promulgate emission standards for either categories or subcategories of sources. Through subcategorization, we are able to define subsets of similar emission sources within a source category if differences in emissions characteristics, processes or opportunities for pollution prevention exist within the source category. Upon initial consideration of the available information on the BSCP manufacturing industry, we determined that separate subcategories for periodic kilns and tunnel kilns were warranted for several reasons. First, periodic kilns are smaller than tunnel kilns (with lower production on an hourly basis, as well as accounting for only about 4 percent of total BSCP industry production). Second, periodic kilns are operated in batch cycles, whereas tunnel kilns operate continuously. Third, periodic kilns are typically operated at higher temperatures than tunnel kilns and products are typically heated

in the kiln for longer periods than products fired in tunnel kilns, resulting in higher energy requirements. As noted in section IV.K.1 of this preamble, we have determined that it is technologically and economically infeasible to test periodic kilns, thereby ruling out a quantitative analysis of how these differences impact emissions. However, a qualitative comparison can be made, in that smaller kilns operated periodically (i.e., periodic kilns) would be expected to have lower emissions over time compared to the larger, continuously operated tunnel kilns.

We then examined the potential for additional subcategories for tunnel kilns, including subcategorization based on kiln fuel and kiln size. Based on the available emissions test data, we could not discern differences in emissions based on fuel type. For that reason, we have not subcategorized by fuel type. We request comment, including additional data if appropriate, on whether we should subcategorize by fuel type. In particular, we request comment on whether we should create a subcategory for kilns fired with sawdust (with or without a sawdust dryer).

We then considered subcategorization of tunnel kilns based on kiln size. There are several differences between the design, operation and efficiency of larger kilns and smaller kilns. In particular, many small kilns are the older, less efficient kilns in the industry and newer kilns can be constructed to be larger and more efficient due to advances in design. Smaller, older

kilns were constructed with large amounts of heavy refractory brick and are narrow and tall in shape, with high arched ceilings. Larger, newer kilns can be constructed with more efficient refractories and can include features such as fiber linings and insulating brick, resulting in a wider kiln with lower ceilings. In addition, the burners in a small kiln are generally less efficient and are located near the bottom of the kiln, where some of the heat is absorbed by the cars that move the bricks through the kiln rather than by the bricks themselves. In a large kiln, the burners are more efficient and are often located at the top of the kiln, where they can fire downward to the product. Combined with the kiln size and shape differences, the difference in burner efficiency and location results in a more even temperature distribution throughout the kiln and product in a large kiln than in a small kiln.

To assess whether these design and operation differences have an effect on emissions and provide support for defining size subcategories in the proposed BSCP manufacturing rule, we conducted a set of statistical analyses on the emissions dataset. In the vacated rule, "small kilns" were defined as kilns with a design capacity less than 10 tph and "large kilns" were defined as kilns with a design capacity of 10 tph or greater. The main goal of the statistical analyses was to determine if these definitions are supported by our current

dataset. Because we have Cl_2 , Hg and non-Hg HAP metals data for only about 10 percent of the kilns in the industry, we conducted the series analyses based on the HF, HCl and PM datasets, which are available for a much larger percentage of the kilns in the industry, providing more representative kiln datasets for the analyses.

We found that the median of the emissions data from kilns in the large kiln dataset was statistically different than the median of the emissions data from kilns in the small kiln dataset for all three pollutants. Also, based on a logistic model, we found high association between emissions and the hypothesized design capacity classification. Finally, we conducted a cluster analysis and considered all three pollutants together to investigate whether the combined dataset supported changing the definitions of small and large kilns. This cluster analysis supported the subcategory definitions from the vacated rule. (For more information on the statistical analyses, see "Analysis of Potential Subcategories for BSCP Tunnel Kilns" in Docket ID No. EPA-HQ-OAR-2013-0291.)

Based on the above information and analyses, we determined that differences in design and emissions exist between large (10 tph or greater) and small (less than 10 tph) kilns. Therefore, we are proposing to exercise our discretion to subcategorize based on kiln size for these kilns' emissions of Hg. As

discussed in section IV.D of this preamble, we are not proposing to exercise our discretion to subcategorize for other pollutants.

D. What approaches did the EPA consider in developing the proposed emission limitations for existing and new sources?

All standards established pursuant to CAA section 112(d)(2) must reflect MACT, the maximum degree of reduction in emissions of air pollutants that the Administrator, taking into consideration the cost of achieving such emissions reductions and any nonair quality health and environmental impacts and energy requirements, determined is achievable for each category.

For existing sources, MACT cannot be less stringent than the average emission limitation achieved by the best performing 12 percent of existing sources for categories and subcategories with 30 or more sources or the best performing five sources for subcategories with less than 30 sources. This requirement constitutes the MACT floor for existing sources. The CAA specifies that MACT for new sources shall not be less stringent than the emission control that is achieved in practice by the best controlled similar source. This minimum level of stringency is the MACT floor for new units.

The EPA may not consider costs or other impacts in determining the MACT floor. However, the EPA must consider cost, nonair quality health and environmental impacts and energy

requirements in connection with any standards that are more stringent than the MACT floor (beyond-the-floor controls).

The remainder of this section describes the development of the pool of data used to calculate the MACT floors for Hg and PM (as a surrogate for non-Hg HAP metals). As noted in section IV.J of this preamble, health-based emissions standards are being proposed for the acid gases HF, HCl and Cl₂ under the provisions of CAA section 112(d)(4). Consequently, the EPA has not prepared a MACT floor analysis for these pollutants.

1. Mercury

In our MACT floor analysis for Hg, we separated the sources into large kiln and small kiln subcategories, as described in section IV.C of this preamble. For each subcategory, we ranked the sources based on the data in terms of lb/ton (as described in section IV.E of this preamble) and identified the best performing 12 percent of sources. Once we identified the best performing kilns, we then calculated the MACT floor in units of lb/ton for each subcategory as described in section IV.E of this preamble. We also calculated the MACT floor in lb/hr and concentration units (µg/dscm at 7-percent O₂) for each subcategory, based on the concentration emissions data for the same top 12 percent (best performing) sources as the lb/ton floor. This is further discussed in section IV.E of this preamble and in the technical memorandum "Maximum Achievable

Control Technology (MACT) Floor Analysis for Brick and Structural Clay Products" in Docket ID No. EPA-HQ-OAR-2013-0291.

2. Total Non-Hg HAP Metals

We developed MACT floors for PM as a surrogate for total non-Hg HAP metals. The available PM data show that kilns controlled with a FF-based APCD (e.g., DIFF, DLS/FF) as a group are better performers than kilns without FF-based controls. When we divided the kilns into two groups, one group consisting of kilns with a FF-based APCD and the other group consisting of uncontrolled kilns and kilns with a different type of APCD, we found that the test data for kilns with FF-based APCD showed they were consistently good performers, while the test data for kilns without a FF-based APCD varied widely. The worst performing kiln with a FF-based APCD performs better than the average kiln in the group without a FF-based APCD. The best performing 75 percent of the kilns with a FF-based APCD showed better performance than 80 percent of the kilns without a FF-based APCD. We also conducted a t-test on the averages of the two groups and we found that the average of the test data for kilns with FF-based APCD was statistically different from the average of the test data for kilns without a FF-based APCD (with 99-percent confidence). See the technical memorandum "Analysis of Potential Subcategories in the BSCP Source Category" in Docket ID No. EPA-HQ-OAR-2013-0291.

One consequence of the wide variability in emissions from kilns without a FF-based APCD is that there are a few uncontrolled kilns and kilns controlled with DLA with lower lb/ton emissions than some of the kilns controlled with a FF-based APCD. We understand that that the emissions from kilns with FF-based APCD will be consistently low over time, based on the design of these APCD and years of experience with these devices. On the other hand, we do not have multiple tests over time that would enable us to say the same for kilns that have a different type of APCD (e.g., DLA) or are uncontrolled. Thus, we are requesting information and analysis as to whether the data showing low emissions from some kilns without a FF-based APCD are reliable.¹

As of January 1, 2014, there were 225 operating BSCP tunnel kilns in the industry (including kilns at major sources and synthetic area sources); the top 12 percent of the kilns in the industry would be represented by the 27 best performing kilns. Therefore, we ranked the kilns with a FF-based APCD in terms of lb/ton (as described in section IV.E of this preamble) and identified the 27 best performing sources from that group. Once

¹ Further, as discussed in section IV.P.1 of this preamble, the EPA is also considering setting emission limits for PM and total non-Hg HAP metals based on the top 12 percent of the data available in each of the kiln size subcategories. The reliability of the data showing low emissions from some kilns without a FF-based APCD is a key factor in the EPA's determination of which approach is appropriate.

we identified the best performing kilns, we then calculated the MACT floor in units of lb/ton as described in section IV.E of this preamble. We also calculated the MACT floor in concentration units (gr/dscf at 7-percent O₂), based on the concentration emissions data for the same top 12 percent (best performing) sources as the lb/ton floor. As another alternative, we calculated an equivalent lb/hr total non-Hg HAP metals limit using the average non-Hg HAP metals content of the PM emissions and the average process rates of the best performing kilns. This limit would provide additional compliance flexibility for small tunnel kilns and tunnel kilns with a low metals content in the PM emissions. The alternatives are further discussed in section IV.E of this preamble and in the technical memorandum "Maximum Achievable Control Technology (MACT) Floor Analysis for Brick and Structural Clay Products" in Docket ID No. EPA-HQ-OAR-2013-0291.

E. How did the EPA determine the MACT floors for existing sources?

The EPA must consider available emissions information to determine the MACT floors. The EPA must exercise its judgment, based on an evaluation of the relevant factors and available data, to determine the level of emissions control that has been achieved by the best performing sources under variable conditions. The United States Court of Appeals for the District

of Columbia Circuit has recognized that the EPA may consider variability in estimating the degree of emission reduction achieved by best performing sources and in setting MACT floors. See Mossville Env't'l Action Now v. EPA, 370 F.3d 1232, 1241-42 (DC Cir. 2004) (holding EPA may consider emission variability in estimating performance achieved by best performing sources and may set the floor at level that best performing source can expect to meet "every day and under all operating conditions").

As discussed in section IV.D of this preamble, the EPA established the MACT floors for PM (as a surrogate for non-Hg HAP metals) for BSCP kilns based on sources representing 12 percent of the number of sources in the category. For Hg emitted from each of the kiln subcategories, the EPA established the MACT floors based on sources representing 12 percent of the sources for which we had emissions information. The MACT floor limitations for Hg and PM (as a surrogate for total non-Hg HAP metals) were calculated based on the performance of the best performing sources in each of the subcategories. The best performing sources were determined by ranking each source's average emission value from lowest to highest.

Once the best performing sources in the MACT floor pools were identified, the MACT floors were calculated using an Upper Prediction Limit (UPL). The UPL takes into consideration the average performance of the units in the MACT floor pool and the

variability of the test runs during the testing conditions. For more information regarding the general use of the UPL and why it is appropriate for calculating MACT floors, see the memorandum "Use of the Upper Prediction Limit for Calculating MACT Floors" in Docket ID No. EPA-HQ-OAR-2013-0291.

The UPL represents the value which one can expect the mean of a specified number of future observations (e.g., 3-run average) to fall below for the specified level of confidence, based upon the results of an independent sample from the same population. A prediction interval for a future observation or an average of future observations, is an interval that will, with a specified degree of confidence, contain the next (or the average of some other pre-specified number of) randomly selected observation(s) from a population. Given this definition, the UPL represents the value which we can expect the mean of three future observations (3-run average) to fall below, based upon the results of an independent sample from the same population. In other words, if we were to randomly select a future test condition from any of these sources (i.e., average of three runs), we can be 99 percent confident that the reported level will fall at or below the UPL value.

There are different UPL equations depending on the distribution of the data (e.g., normal, lognormal, skewed/unknown). We first determined the distribution of each

MACT floor pool's data to determine the appropriate UPL equation using statistical tests of the kurtosis (K), standard error of kurtosis (SEK), skewness (S) and standard error of skewness (SES). The skewness statistic (S) characterizes the degree of asymmetry of a given dataset. According to the skewness hypothesis test, if S is less than two times the SES, the data distribution can be considered to be normal. The kurtosis statistic (K) characterizes the degree of peakedness or flatness of a given data distribution in comparison to a normal distribution. According to the kurtosis hypothesis test, if K is less than two times the SEK, the data distribution can be considered to be normal. The skewness and kurtosis hypothesis tests were applied to both the reported test values and the log-transformed values of the reported test values to determine the distribution of each dataset. A UPL was then calculated for each MACT floor pool with the UPL equation corresponding to the dataset's distribution (e.g., normal, lognormal, skewed/unknown).

A more detailed explanation of all the UPL equations used, including the calculations of kurtosis, standard error of kurtosis, skewness and standard error of skewness, can be found in the technical memorandum "Maximum Achievable Control Technology (MACT) Floor Analysis for Brick and Structural Clay Products" in Docket ID No. EPA-HQ-OAR-2013-0291.

Test method measurement imprecision can also be a component of data variability. Of particular concern are those data that are reported near or below a test method's pollutant detection capability. There is a concern that a floor emissions limit calculated using values at or near the method detection limit may not account adequately for data measurement variability. The expected measurement imprecision for an emissions value occurring at or near the detection limit is about 40 to 50 percent. Relative pollutant measurement imprecision decreases to a consistent 10 to 15 percent for values measured at a level about 3 times the method detection limit.²

One approach that we believe could be applied to account for measurement variability would require defining a detection limit that is representative of the data used in establishing the floor emissions limitations and also minimizes the influence of an outlier test-specific method detection limit value. The EPA has developed a list of representative detection levels (RDL) developed from available pollutant specific method detection levels.³ These RDL values are then multiplied by three to decrease measurement imprecision to around 10 to 15 percent

² American Society of Mechanical Engineers, Reference Method Accuracy and Precision (ReMAP): Phase 1, Precision of Manual Stack Emission Measurements, CRTD Vol. 60, February 2001.

³ "Data and procedure for handling below detection level data in analyzing various pollutant emissions databases for MACT and RTR emissions limits." Memorandum from Peter Westlin, SPPD, MPG and Raymond Merrill, AQAD, MTG, to SPPD management and MACT rule writers. December 13, 2011.

(as noted in the previous paragraph), resulting in values referred to as "3xRDL" values.

The appropriate 3xRDL value was compared to the calculated UPL value for each pollutant and subcategory. If the 3xRDL value was less than the calculated UPL value, we concluded that measurement variability is adequately addressed and we used the calculated UPL value as the MACT floor emissions limit. If, on the other hand, the 3xRDL value was greater than the calculated UPL value, we concluded that the calculated UPL value does not account entirely for measurement variability. We then used the 3xRDL value in place of the calculated UPL value to ensure that measurement variability is adequately addressed in the MACT floor emissions limit. This check was part of the variability analysis for all existing MACT floors that had below detection limit (BDL) or detection level limited (DLL) run data present in the best performing datasets (see the technical memorandum "Maximum Achievable Control Technology (MACT) Floor Analysis for Brick and Structural Clay Products" in Docket ID No. EPA-HQ-OAR-2013-0291).

As previously discussed, we accounted for variability in setting floors, not only because variability is an element of performance, but because it is reasonable to assess best performance over time. For example, we know that the HAP emission data from the best performing units are, for the most

part, short-term averages and that the actual HAP emissions from those sources will vary over time. If we do not account for this variability, we would expect that even the units that perform better than the floor on average could potentially exceed the floor emission levels a part of the time, which would mean that variability was not properly taken into account. This variability may include the day-to-day variability in the total HAP input to each unit; variability of the sampling and analysis methods; and variability resulting from site-to-site differences for the best performing units. The EPA's consideration of variability accounted for that variability exhibited by the data representing multiple units and multiple data values for a given unit (where available). We calculated the MACT floor based on the UPL (upper 99th percentile) as described earlier from the average performance of the best performing units and the variability of the best performing units.

We believe this approach reasonably ensures that the emission limits selected as the MACT floors adequately represent the level of emissions actually achieved by the average of the units in the top 12 percent, considering operational variability of those units. Both the analysis of the measured emissions from units representative of the top 12 percent and the variability analysis are reasonably designed to provide a meaningful estimate of the average performance or central tendency, of the

best performing 12 percent of units in a given subcategory. A detailed discussion of the MACT floor methodology is presented in the technical memorandum "Maximum Achievable Control Technology (MACT) Floor Analysis for Brick and Structural Clay Products" in Docket ID No. EPA-HQ-OAR-2013-0291.

Table 5 of this preamble presents the average emission level of the best performing sources and the existing source MACT floor. For this source category, all the existing source MACT floors are based on the UPL.

Table 5—Summary of MACT Floor Results for Brick and Structural Clay Products Existing Sources^a

Subcategory	Parameter	Hg ^b	PM ^{b,c}
Large tunnel kilns (≥ 10 tph)	Avg. of best performing sources	1.6 E-05 lb/ton 1.7 E-04 lb/hr 14 µg/dscm	--
	MACT floor	2.2 E-05 lb/ton 2.7 E-04 lb/hr 29 µg/dscm	--
Small tunnel kilns (< 10 tph)	Avg. of best performing sources	1.8 E-04 lb/ton 0.0010 lb/hr 62 µg/dscm	--
	MACT floor	2.0 E-04 lb/ton 0.0011 lb/hr 70 µg/dscm	--
All kilns	Avg. of best performing sources	--	0.041 lb/ton 0.011 gr/dscf
	MACT floor	--	0.16 lb/ton 0.040 gr/dscf

^a For this source category, all the existing source MACT floors are based on the UPL.

^b Concentration units are at 7-percent O₂.

^c PM is a surrogate for non-Hg HAP metals.

F. How did the EPA determine the MACT floors for new sources?

The approach that we used to calculate the MACT floors for new sources is somewhat different from the approach that we used to calculate the MACT floors for existing sources because the statutory standard is different. Although the MACT floors for existing units are intended to reflect the performance achieved by the average of the best performing 12 percent of sources, the MACT floors for new units are meant to reflect the emission control that is achieved in practice by the best controlled similar source. Thus, for existing units, we are concerned about estimating the central tendency of a set of multiple units, whereas for new units, we are concerned about estimating the level of control that is representative of that achieved by a single best performing source. As with the analysis for existing sources, the new source analysis must account for variability.

Similar to the MACT floor process used for existing units, the approach we used for determining the MACT floor for new units was based on available emissions test data. Specifically, we calculated the new source MACT floor for a subcategory of sources by ranking each unit's average emission value within the subcategory from lowest to highest to identify the best performing similar source. The new source MACT floor limits for Hg and PM (as a surrogate for total non-Hg HAP metals) were

calculated based on the performance of the best performing source for each pollutant in each of the subcategories.

The MACT floor limits for new sources were calculated using the same UPL formula as was used for existing sources, except the data used were from the best performing source rather than the best performing 12 percent of sources. As previously discussed, we accounted for variability of the best performing source in setting floors, not only because variability is an element of performance, but because it is reasonable to assess best performance over time. We calculated the new source MACT floor based on the UPL (upper 99th percentile) as described earlier from the average performance of the best performing similar source, Student's t-factor and the total variability of the best performing source.

This approach reasonably ensures that the emission limit selected as the MACT floor for new sources adequately represents the average level of control achieved in practice by the best controlled similar source, considering ordinary operational variability. A detailed discussion of the MACT floor methodology is presented in the technical memorandum "Maximum Achievable Control Technology (MACT) Floor Analysis for Brick and Structural Clay Products" in Docket ID No. EPA-HQ-OAR-2013-0291.

Table 6 of this preamble presents, for each subcategory and pollutant, the average emission level of the best performing

similar source and the new source MACT floor. The new source MACT floors are based on the UPL unless otherwise noted.

Table 6—Summary of MACT Floor Results for Brick and Structural Clay Products New Sources^a

Subcategory	Parameter	Hg ^b	PM ^{b, c}
Large tunnel kilns (≥ 10 tph)	Avg. of top performer	1.5 E-05 lb/ton 1.8 E-04 lb/hr 10 $\mu\text{g/dscm}$	--
	MACT floor	2.0 E-05 lb/ton 2.4 E-04 lb/hr 13 $\mu\text{g/dscm}$	--
Small tunnel kilns (< 10 tph)	Avg. of top performer	1.8 E-04 lb/ton 0.0010 lb/hr 62 $\mu\text{g/dscm}$	--
	MACT floor	2.0 E-04 lb/ton 0.0011 lb/hr 70 $\mu\text{g/dscm}$	--
All kilns	Avg. of top performer	--	0.0060 lb/ton 0.0020 gr/dscf
	MACT floor	--	0.022 lb/ton ^d 0.0066 gr/dscf ^d

^a The new source MACT floors are based on the UPL unless otherwise noted.

^b Concentration units are at 7 percent O₂.

^c PM is a surrogate for non-Hg HAP metals.

^d The MACT floor is based on the 3xRDL value.

G. What is our approach for applying the upper prediction limit to limited datasets?

In a recent United States Court of Appeals for the District of Columbia Circuit decision in National Association of Clean Water Agencies v. EPA, which involved challenges to EPA's MACT standards for sewage sludge incinerators, questions were raised regarding the application of the UPL to limited datasets. We have since addressed these questions, as explained in detail in

the memorandum titled, "Approach for Applying the Upper Prediction Limit to Limited Datasets" (hereafter referred to as the "Limited Dataset Memo"), which is available in Docket ID No. EPA-HQ-OAR-2013-0291.

A limited dataset is defined as having less than seven data points. In calculating MACT floor limits based on limited datasets, we considered additional factors as described in the Limited Dataset Memo. We seek comments on the approach described in the Limited Dataset Memo and whether there are other approaches we should consider for such datasets. We also seek comments on the application of this approach for the derivation of MACT limits based on limited datasets in this proposal, which are described in the Limited Dataset Memo.

For the BSCP manufacturing source category, we have limited datasets for the following pollutants and subcategories: Hg for existing and new small tunnel kilns; PM for new tunnel kilns; and Hg for new large tunnel kilns. For each dataset, we performed the steps outlined in the Limited Dataset Memo. See the Limited Dataset Memo for more information.

H. How did the EPA consider beyond-the-floor for existing sources?

As discussed in sections II.A and IV.D of this preamble, the EPA must consider emissions limitations and requirements that are more stringent than the MACT floor (i.e., beyond-the-

floor options). When considering beyond-the-floor options, the EPA must consider not only the maximum degree of reduction in emissions of HAP, but must take into account the associated costs, energy and non-air quality health and environmental impacts.

Once the MACT floor determinations were complete for each subcategory, we considered regulatory options more stringent than the MACT floor level of control (e.g., the performance of technologies that could result in lower emissions) for the different subcategories. We considered requiring all existing sources to meet the new source MACT floors for Hg and PM (as a surrogate for total non-Hg HAP metals) developed as described in section IV.F of this preamble. We analyzed the beyond-the-floor options for Hg and total non-Hg HAP metals separately for existing sources. Our analyses are documented in the technical memorandum, "Development of Cost and Emission Reduction Impacts for the BSCP NESHAP," in Docket ID No. EPA-HQ-OAR-2013-0291.

The beyond-the-floor option for total non-Hg HAP metals is estimated to achieve additional non-Hg HAP metals reductions of 2.86 tpy and cost an additional \$22.8 million per year (2011 dollars), for a cost effectiveness of \$7,960,000 per ton of total additional non-Hg HAP metals removed. The beyond-the-floor option for Hg is estimated to achieve additional Hg reductions of 0.0625 tpy (125 pounds per year) and cost an additional \$9.25

million per year (2011 dollars), for a cost effectiveness of \$148,000,000 per ton of total additional Hg removed (\$74,000 per pound of additional Hg removed). We have concluded that the incremental costs of additional control beyond the MACT floor emission limits are not reasonable relative to the level of emission reduction achieved for either the Hg or total non-Hg HAP metals beyond-the-floor options. Therefore, we are not proposing beyond-the-floor limits for Hg or total non-Hg HAP metals.

I. How did the EPA consider beyond-the-floor for new sources?

The MACT floor level of control for new tunnel kilns for each pollutant was based on the emission control that is achieved in practice by the best controlled similar source within each of the subcategories. A new kiln would likely need both a FF and ACI system for control of non-Hg HAP metals and Hg to meet the new source MACT floors. When we establish a beyond-the-floor standard, we typically identify control techniques that have the ability to achieve an emissions limit more stringent than the MACT floor. No techniques were identified that would achieve HAP reductions greater than the new source floors for the subcategories. Therefore, the EPA is not proposing a beyond-the-floor limit for new sources in this proposed BSCP manufacturing rule.

J. How did the EPA determine whether to set health-based standards for existing and new sources?

In developing the proposed BSCP manufacturing rule, we considered whether it was appropriate to establish health-based emission standards under CAA section 112(d)(4) for the acid gases HF, HCl and Cl₂. As a general matter, CAA section 112(d) requires MACT standards at least as stringent as the MACT floor to be set for all HAP emitted from major sources. However, CAA section 112(d)(4) provides that for HAP with established health thresholds, the EPA has the discretionary authority to consider such health thresholds when establishing emission standards under CAA section 112(d). This provision is intended to allow the EPA to establish emission standards other than technology-based MACT standards, in cases where an alternative emission standard will still ensure that the health threshold will not be exceeded, with an ample margin of safety. This section discusses the prerequisite for setting a CAA section 112(d)(4) standard, the factors the EPA considered in exercising its discretion to set a CAA section 112(d)(4) standard and how the EPA set the level of the proposed standard.

1. What are the prerequisites for setting a CAA section 112(d)(4) standard?

The prerequisites for setting a CAA section 112(d)(4) standard are that the pollutant must have a health threshold and

not be carcinogenic.⁴ Whether a pollutant has a health threshold is based on certain factors, including evidence and classification of carcinogenic risk and evidence of noncarcinogenic effects:⁵

- The EPA "presumptively concludes" that known, probable and possible carcinogens (Group A, B and C pollutants) "should not be categorized as threshold pollutants."
- Pollutants for which there is not enough evidence to make a conclusion on carcinogenicity (Group D pollutants) will be evaluated on a case-by-case basis.
- Pollutants classified as non-carcinogens (Group E pollutants) are "presumptively considered" to be threshold pollutants.⁶

Health threshold standards may not be set for pollutants that are carcinogenic.⁷

The EPA has exercised its discretionary authority under CAA section 112(d)(4) in a handful of prior actions setting emissions standards for other major source categories, including the emissions standards issued in 2004 for commercial and industrial boilers and process heaters, which were vacated on

⁴ See Portland Cement NESHAP Final Rule, 75 FR 54970, 54985 (col. 2-3) (September 9, 2010) ("In order to exercise this discretion [to set health threshold standards under 112(d)(4)], EPA must first conclude that the HAP at issue has an established health threshold...").

⁵ See Pulp and Paper Chemical Recovery Combustion Sources NESHAP Proposed Rule, 63 FR 18754, 18766/1-18767/1 (April 15, 1998).

⁶ The current weight-of-evidence under the 2005 EPA Guidelines for Carcinogen Risk Assessments, which replaced the 1986 cancer guidelines, recommends the following cancer hazard descriptors: "Carcinogenic to Humans," "Likely to Be Carcinogenic to Humans," "Suggestive Evidence of Carcinogenic Potential," "Inadequate Information to Assess Carcinogenic Potential," and "Not Likely to Be Carcinogenic to Humans" (which are considered equivalent to the 1986 groups A,B,C,D and E respectively).

⁷ See Pulp and Paper Chemical Recovery Combustion Sources NESHAP Proposed Rule, 63 FR 18754, 18765/3 ("The EPA presumptively applies section 112(d)(4) only to HAP's that are not carcinogens because Congress clearly intended that carcinogens be considered nonthreshold pollutants").

other grounds by the United States Court of Appeals for the District of Columbia Circuit. In the proposals for both the Pulp and Paper Chemical Recovery Combustion Sources NESHAP, 63 FR at 18765 (April 15, 1998) and Lime Manufacturing NESHAP, 67 FR at 78054 (December 20, 2002), the EPA invoked CAA section 112(d)(4) for HCl emissions for discrete units within the facility. In those proposed actions, the EPA concluded that HCl had an established health threshold (in those cases it was interpreted as the reference concentration for chronic effects or RfC) and was not classified as a human carcinogen. In light of the absence of evidence of carcinogenic risk, the availability of information on noncarcinogenic effects and the limited potential health risk associated with the discrete units being regulated, the EPA concluded that it was within the EPA's discretion to set an emissions standard under CAA section 112(d)(4) for HCl under the circumstances of those actions.

In more recent actions, the EPA noted that HCl was a threshold pollutant, but decided not to propose a health-based emission standard for HCl emissions under CAA section 112(d)(4) for Portland Cement facilities (74 FR at 21154; May 6, 2009) or for Boilers and Process Heaters (75 FR at 32032; June 4, 2010) for other reasons. To date, the EPA has not implemented a NESHAP

that applied the provisions of CAA section 112(d)(4) to HF or Cl₂.⁸

Since any emission standard under CAA section 112(d)(4) must consider the established health threshold level, with an ample margin of safety, in this proposed BSCP manufacturing rulemaking the EPA has considered the adverse health effects of the HAP acid gases, HCl, Cl₂ and HF. The standard approach for determining potential hazards of a pollutant has been to use a health benchmark below which effects are not expected to occur. Described below are the health effects and benchmarks for HCl, Cl₂ and HF and the rationale for their designation as threshold pollutants. It is important to note that if exposure levels as proposed by the emissions limits in this proposed BSCP manufacturing rulemaking are achieved, the adverse health effects described below will not be of concern for emissions from these source categories.

Hydrogen chloride is corrosive to the eyes, skin and mucous membranes. Acute inhalation exposure may cause eye, nose and respiratory tract irritation and inflammation and pulmonary edema in humans. Chronic occupational exposure to HCl has been reported to cause gastritis, bronchitis and dermatitis in workers. Prolonged exposure to low concentrations may also cause

⁸ The EPA has not classified HF or Cl₂ gas with respect to carcinogenicity. However, at this time the agency is not aware of any data that would suggest either of these HAP are carcinogens.

dental discoloration and erosion. No information is available on the reproductive or developmental effects of HCl in humans. In rats exposed to HCl by inhalation, altered estrus cycles have been reported in females and increased fetal mortality and decreased fetal weight have been reported in offspring. The EPA conducted a toxicity assessment of chronic inhalation exposure to HCl and has established an RfC of 20 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$).⁹ An RfC is defined as an estimate (with uncertainty spanning perhaps an order of magnitude) of a continuous inhalation exposure to the human population (including sensitive subgroups¹⁰) that is likely to be without an appreciable risk of deleterious effects during a lifetime. The EPA RfC for HCl was based on respiratory toxicity observed in animals. An uncertainty factor of 300 was applied to the lowest adverse effect level noted in animals. This assessment did not take into account effects associated with acute exposure.¹¹ The EPA has not classified HCl for carcinogenicity.

⁹ U.S. Environmental Protection Agency. Integrated Risk Information System (IRIS). Hydrogen chloride (CASRN 7647-01-0). 1995. Available at: <http://www.epa.gov/iris/subst/0396.htm>. Accessed on April 11, 2014.

¹⁰ "Sensitive subgroups" may refer to particular life stages, such as children or the elderly or to those with particular medical conditions, such as asthmatics.

¹¹ California EPA considered acute toxicity and established a 1-hour reference exposure level (REL) of $2.1 \text{ mg}/\text{m}^3$. An REL is the concentration level at or below which no adverse health effects are anticipated for a specified exposure duration. RELs are designed to protect the most sensitive individuals in the population by the inclusion of margins of safety.

With respect to the potential health effects of HCl, we know the following:

- Chronic exposure to concentrations at or below the RfC is not expected to cause chronic respiratory effects.
- Little research has been conducted on its carcinogenicity. The one occupational study of which we are aware found no evidence of carcinogenicity.
- There is a significant body of scientific literature addressing the health effects of acute exposure to HCl.¹²

Based on this information, the agency believes it is reasonable to classify HCl as a Group D pollutant.¹³ Based on the negative carcinogenicity data and on the EPA's knowledge of how HCl reacts in the body and its likely mechanism of action, as discussed above, the agency considers HCl to be a threshold pollutant.

The effects of acute exposure to humans and animals to Cl₂ have been well characterized. Similar to HCl, Cl₂ is a well-known sensory irritant (capable of eliciting sensory irritation) and the most sensitive target for toxicity in humans and animals is the respiratory system. Acute exposures to low levels of Cl₂ (approximately 3 to 40 milligrams per cubic meter (mg/m³)) have been shown to cause nose, eyes and throat irritation in humans. Acute exposure to high levels (above 40 mg/m³) of Cl₂ in humans

¹² See California Office of Health Hazard Assessment. Acute Toxicity Summary for Hydrogen Chloride. Available at: http://www.oehha.ca.gov/air/hot_spots/2008/AppendixD2_final.pdf#page=112, EPA, 2008.

¹³ See Health Assessment Document for Chlorine and Hydrogen Chloride, Review Draft; EPA-600/8-87/041A, August 1994.

can result in chest pain, vomiting, toxic pneumonitis and pulmonary edema. Chronic (long-term) exposure to Cl_2 gas in workers has resulted in respiratory effects including eye and throat irritation and airflow obstruction. Animal studies have reported decreased body weight gain, eye and nose irritation, non-neoplastic nasal lesions and respiratory epithelial hyperplasia from chronic inhalation exposure to Cl_2 . There is no evidence that Cl_2 causes reproductive or developmental effects in animals or humans. A few studies of workers in the chemical industry did not find any evidence that Cl_2 is carcinogenic. The EPA, the International Agency for Research on Cancer (IARC) and the Department of Health and Human Services (DHHS) have not classified Cl_2 gas as to its carcinogenicity.

The human health value for Cl_2 is an Agency for Toxic Substances and Disease Registry (ATSDR) Minimal Risk Level (MRL) of $0.00015 \mu\text{g}/\text{m}^3$.¹⁴ The MRL is defined as an estimate of daily human exposure to a substance that is likely to be without an appreciable risk of adverse effects (other than cancer) over a specified duration of exposure.¹⁵ The MRL was based on respiratory toxicity (nasal lesions) observed in a chronic

¹⁴ Toxicological Profile for Chlorine, Agency for Toxic Substances and Disease Registry (ATSDR) 2010. Available at <http://www.atsdr.cdc.gov/toxprofiles/tp.asp?id=1079&tid=36>.

¹⁵ Inhalation MRLs are used in noncancer assessments when IRIS RfCs are not available because their concept, definition and derivation are philosophically consistent (though not identical) with the basis for EPA's RfCs (<http://www.epa.gov/ttn/atw/nata1999/99pdfs/healtheffectsinfo.pdf>).

inhalation exposure (1 year) in monkeys. An uncertainty factor of 30 was applied to the MRL to account for uncertainties in extrapolating results from animal to humans and to account for human variability. Since the effects of acute exposure of humans and animals to Cl_2 have been well characterized, the ATSDR toxicity profile for Cl_2 also included acute MRL.

With respect to the potential health effects of Cl_2 , we know the following:

- Chronic exposure to concentrations at or below the MRL is not expected to cause chronic respiratory effects.
- The acute effects of Cl_2 have been well characterized in humans.
- Studies of workers in the chemical industry did not find any evidence that Cl_2 is carcinogenic.

Based on the negative carcinogenicity data and on the EPA's knowledge of how Cl_2 reacts in the body and its likely mechanism of action, as discussed above, the agency presumptively considers Cl_2 to be a threshold pollutant.

There is a significant body of scientific literature addressing the health effects of acute exposure to HF.¹⁶ Hydrogen fluoride is a respiratory tract irritant capable of causing severe tissue damage in the respiratory system. Acute (short-term) inhalation exposure to gaseous HF can cause severe respiratory effects in humans, including severe irritation and

¹⁶ California EPA Chronic Toxicity Summary for Fluorides including Hydrogen Fluoride. 2003. Available at http://www.oehha.org/air/hot_spots/2008/AppendixD3_final.pdf#page=270.

pulmonary edema. Severe ocular irritation and dermal burns may occur following eye or skin exposure in humans. Because the toxic effects of HF are, to a large extent, based on the fluoride ion rather than the hydrogen ion, it is noteworthy to mention that the major health effect of chronic inhalation exposure to high levels of fluoride is skeletal fluorosis. In skeletal fluorosis, fluoride accumulates in the bone progressively over many years and can cause a variety of symptoms including stiffness and pain in the joints. In severe cases, the bone structure may change and ligaments may calcify, resulting in muscle impairment and pain. Chronic inhalation exposure to HF (with particulate fluorides) in the aluminum industry has been associated with increased risk of asthma. Chronic oral exposure to fluoride at low levels has a beneficial effect of dental cavity prevention and may also be useful for the treatment of osteoporosis. Exposure to higher levels of fluoride may cause dental and bone fluorosis. Although the existing toxicological database on fluoride does not provide strong evidence for the consideration of fluoride as an essential element, several organizations consider fluoride an important dietary element for humans. The Institute of Medicine (IOM) has derived adequate intake values ranging from 0.01 to 4

milligrams per day to reduce the occurrence of dental caries.¹⁷ The World Health Organization (WHO) considers fluoride to be "essential" because it considered "resistance to dental caries to be a physiologically important function."¹⁸ With regard to HF carcinogenic potential, the ATSDR Public Health Statement document states that "carcinogenicity via inhalation of fluoride is not considered to be likely by most investigators reporting in the existing literature." The EPA has not classified HF for carcinogenicity.

The chronic inhalation noncancer human health value the EPA uses for HF is the REL of 0.014 mg/m³ derived by California EPA (CalEPA).¹⁹ CalEPA defines the REL as a concentration level at (or below) which no adverse health effects are anticipated for specific exposure durations, a concept that is substantially similar to EPA's non-cancer dose-response assessment perspective and we, therefore, use it as an alternate value in the absence of an IRIS RfC.²⁰ REL are designed to protect the most sensitive

¹⁷ IOM. 1997. Dietary reference intakes for calcium, phosphorus, magnesium, vitamin D and fluoride. Washington, DC: Institute of Medicine. National Academy of Sciences. National Academy Press. www4.nationalacademies.org/iom/iomhome.nsf.

¹⁸ WHO. 2002. Fluorides. Geneva, Switzerland: World Health Organization. Environmental Health Criteria Number 227. <http://www.inchem.org/pages/ehc.html>.

¹⁹ California EPA Chronic Toxicity Summary for Fluorides including Hydrogen Fluoride. 2003. Available at http://www.oehha.org/air/hot_spots/2008/AppendixD3_final.pdf#page=270.

²⁰ The California Office of Environmental Health Hazard Assessment has developed dose-response assessments for many substances, based both on carcinogenicity and health effects other than cancer. The process for

individuals in the population by the inclusion of margins of safety. The REL was based on minimal changes in bone density (skeletal fluorosis) in the workplace by Derryberry et al.²¹ CalEPA states that major strengths of the key study on which the chronic REL is based is the observation of health effects in a large group of workers exposed over many years and the identification of no observable adverse effect level (NOAEL). The primary uncertainty in the study is the lack of comprehensive health effects examination. Another source of concern is the potential for greater susceptibility of children to the effects of inhaled fluorides, considering the rapid bone growth at early lifestages. This effect applies with particular importance to children's teeth since it has been established that excessive exposure to fluoride during tooth development in infancy and childhood causes dental fluorosis. To account for uncertainties, the CalEPA REL included a factor of 10 for intraspecies differences (which also accounts for variation in kinetics between children and adults). In addition, the chronic inhalation REL is lower than the oral chronic REL and the California Public Health Guidance for fluoride in drinking

developing these assessments is similar to that used by the EPA to develop IRIS values and incorporates significant external scientific peer review. The EPA may use CalEPA values in the absence of an IRIS value.

<http://www.epa.gov/ttn/atw/nata1999/99pdfs/healtheffectsinfo.pdf>.

²¹ Derryberry OM, Bartholomew MD, Fleming RBL. 1963. "Fluoride exposure and worker health." Arch Environ Health 6:503-514.

water, which are based on lifetime exposure and protective of infants and children. CalEPA also considered the acute toxicity of HF and established a 1-hour REL of 0.24 mg/m³ based on mild eye and respiratory irritation.

With respect to the potential health effects of HF, we know the following:

- Chronic exposure at or below the REL is not expected to cause adverse effects.
- There is limited/equivocal evidence of the carcinogenic potential of HF. With regard to the carcinogenic potential evidence available, the ATSDR Public Health Statement document on HF states that "carcinogenicity via inhalation of fluoride is not considered to be likely by most investigators reporting in the existing literature."²²
- There is significant evidence on the health effects of acute exposure to HF allowing for the derivation of an acute health benchmark.

Based on the negative carcinogenicity data and on the EPA's knowledge of how HF reacts in the body and its likely mechanism of action, as discussed above, the agency considers HF to be a threshold pollutant.

2. What factors does the EPA consider in exercising its discretion whether to set a CAA section 112(d)(4) standard?

The EPA may exercise its discretionary authority under CAA section 112(d)(4) only with respect to pollutants with a health threshold. Where there is an established threshold, the EPA

²² Toxicological Profile for Chlorine, Agency for Toxic Substances and Disease Registry (ATSDR) 2010. Available at <http://www.atsdr.cdc.gov/toxprofiles/tp.asp?id=1079&tid=36>.

interprets CAA section 112(d)(4) to allow it to weigh additional factors, beyond any established health threshold, in making a judgment whether to set a standard for a specific pollutant based on the threshold or instead follow the traditional path of developing a MACT standard after determining a MACT floor. In deciding whether to exercise its discretion for a threshold pollutant for a given source category, the EPA interprets CAA section 112(d)(4) to allow it to take into account factors such as the following:

- The availability of data to set the health-based standard;
- Co-benefits that would be achieved via the MACT standard, such as reductions in emissions of other HAP and/or criteria pollutants;
- The potential impacts on ecosystems of releases of the pollutant; and
- The potential for cumulative adverse health effects due to concurrent exposure to the same HAP or other HAP with similar biological endpoints, from either the same or other source categories, where the concentration of the threshold pollutant emitted from the given source category is below the threshold.

If the EPA does determine that it is appropriate to set a standard based on a health threshold, the agency must develop emission standards that will ensure the public will not be exposed to levels of the pertinent HAP emitted from the source category in question in excess of the health threshold, with an ample margin of safety.

a. Availability of Data to Determine a Standard

In determining whether to set a health-based standard, the EPA considered whether sufficient data for a particular industry are available to determine such a standard. In previous rules, the EPA declined to set a health-based standard, based in part on the unavailability of data to determine a standard.²³ However, for the proposed BSCP manufacturing rule, because of the relatively small number of facilities compared to other rules such as the Boiler MACT proposal, the EPA was able to determine facility-specific information, including tunnel kiln locations and operating characteristics and stack parameters, available for all BSCP facilities to assess the feasibility of health-based standards in this rule. Such information enabled us to conduct the dispersion modeling necessary to establish a health-based emission limit for acid gases.²⁴ Consequently, we have concluded that we have enough information to determine the health-based emission standards for the acid gases HF, HCl and Cl₂ for the BSCP manufacturing industry. As discussed in further detail below, these limits have been developed to ensure that

²³ See Boiler MACT Proposed Rule, 75 FR 32006, 32031/3 (June 4, 2010) ("[W]e have concluded that we do not have sufficient information at this time to establish what the health-based emission standards would be for HCl or the other acid gases.").

²⁴ For more information, see the technical memorandum, "Risk Assessment to Determine a Health-Based Emission Limitation for Acid Gases for the Brick and Structural Clay Products Manufacturing Source Category," in Docket ID No. EPA-HQ-OAR-2013-0291.

exposure is below the health threshold for each facility and also ensure that acute exposures will not pose any health concerns.²⁵

b. Co-benefits

We also considered whether setting technology-based MACT standards for HF, HCl and Cl₂ from BSCP plants would result in significant reductions in emissions of other pollutants, most notably sulfur dioxide (SO₂). Although MACT standards may directly address only HAP, not criteria pollutants, Congress did recognize, in the legislative history to CAA section 112(d)(4), that MACT standards would have the collateral benefit of controlling criteria pollutants as well and viewed this as an important benefit of the air toxics program.²⁶ Therefore, even where the EPA concludes a HAP has a health threshold, the agency may consider such co-benefits as a factor in determining whether to exercise its discretion under CAA section 112(d)(4). The additional nationwide reductions of SO₂ that would be attributable to BSCP MACT standards for acid gases are estimated to be only 4,300 tpy in the third year following promulgation of the proposed BSCP standards. This reduction is substantially

²⁵ See Portland Cement NESHAP Final Rule, 75 FR 54970, 54986/1 (September 9, 2010) ("[W]e currently lack information on the peak short-term emissions of HCl from cement kilns which might allow us to determine whether a chronic health-based emission standard for HCl would ensure that acute exposures will not pose health concerns.").

²⁶ See S. Rep. No. 101-228, 101st Cong. 1st sess. at 172.

lower than the co-benefits from MACT standards for other industries for which the EPA has decided not to set a health-based limit,²⁷ and it would not be expected to provide a significant public health benefit.

c. Ecosystem Impacts

In addition to potential health impacts, the EPA has evaluated the potential for environmental impacts when considering whether to exercise discretion under CAA section 112(d)(4).²⁸ The agency applied the environmental risk screen methodology that it uses in the Risk and Technology Program under section 112 of the CAA to evaluate the potential for

²⁷ See Portland Cement NESHAP Final Rule, 75 FR 54970 (September 9, 2010) - Co-benefits was identified as the "decisive factor" in the Portland Cement NESHAP Final Rule. 75 FR 54970, 54985/3. There, EPA declined to set a health-based standard for HCl where setting a MACT standard also controlled other HAP and criteria pollutants. Specifically discussed were SO₂ and other HAP gases. See 75 FR at 54984/3 ("The additional reductions of SO₂ alone attributable to the MACT standards for HCl are estimated to be 124,000 tons per year" and discussing both direct SO₂ effects and effects of SO₂ as a precursor to PM_{2.5}) and 75 FR at 54986/1 ("[Other HAP gases (chlorine (Cl₂), hydrogen cyanide (HCN) and hydrogen fluoride (HF))] are also controlled during the process of controlling HCl emissions from cement kilns using a wet scrubber. As such, their health impacts must be taken into account when considering a health-based emission limit for HCl." See also Boiler MACT Final Rule, 76 FR at 15644/1 ("EPA considered the comments received on this issue and continues to believe that the co-benefits are significant and provide an additional basis for the Administrator to conclude that it is not appropriate to exercise her discretion under section 112(d)(4).") and Boiler MACT Proposed Rule, 75 FR 32006, 32032 (June 4, 2010) - Co-benefits from MACT standard for HCl and PM as surrogate for HAP metals included the reduction of 340,000 tons per year of SO₂ and unspecified reductions of PM, other non-HAP acid gases (hydrogen bromide) and Hg. See also MATS Proposed Rule, 76 FR 24976, 25051/1 - Co-benefits from MACT standard for HCl and PM as surrogate for HAP metals included the reduction of 2.1 million tons per year of SO₂ and unspecified reductions of PM, other non-HAP acid gases (hydrogen bromide) and Hg.

²⁸ See Portland Cement NESHAP Final Rule, 75 FR 54970, 54986/3 (September 9, 2010).

chronic exposure to acid gases emitted by BSCP facilities to cause phytotoxicity and reduced productivity of plants.

The environmental screen uses air concentrations from the HEM-3 model used in the human health exposure and risk analysis. We take these concentrations and derive an area-weighted average offsite annual ambient air concentration for each pollutant. The area-weighted average concentrations are compared directly to the appropriate ecological benchmarks for a given pollutant by dividing the area-weighted average concentration by the appropriate ecological benchmark. The result is called a hazard quotient (HQ). An HQ greater than 1 indicated that the area-weighted average concentration exceeded the ecological benchmark.

For the section 112(d)(4) evaluation, the EPA assessed the acid gases HCl and HF around each BSCP facility. Although Cl₂ may also be emitted from BSCP facilities, chlorine gas is so reactive that it is not expected to remain in the environment very long after it is released. Chlorine immediately reacts with both organic and inorganic materials that it comes into contact with. Chlorine undergoes direct photolysis in the air and its half-life in the troposphere is on the order of several minutes. Therefore, it was not considered in the environmental risk screening for the BSCP Manufacturing source category.

For HCl, the environmental risk screen indicated that the area-weighted average modeled concentrations of HCl around each facility (i.e., the area-weighted average concentration of all offsite data points in the modeling domain) did not exceed the ecological benchmark. In addition, there was only one facility with a modeled concentration of HCl at an offsite receptor location that exceeded the ecological benchmark and that was at a single receptor.

For HF, the environmental risk screen indicated that the area-weighted average modeled concentrations of HF around each facility (i.e., the area-weighted average concentration of all offsite data points in the modeling domain) did not exceed the ecological benchmarks. There were multiple facilities with modeled concentrations of HF at offsite receptor locations that exceeded the ecological benchmark, but the area over which the value was exceeded was less than one percent of the offsite modeling domain for each facility, indicating that there would not be any significant or widespread environmental effects.

d. Cumulative Effects

The EPA may consider the availability of information on emissions from co-located and nearby sources and consider if it is feasible to determine the potential cumulative health effects from emissions from the sources in the category when combined with other emissions from other sources that are co-located or

located nearby. Relevant emissions may include both emissions of the same pollutant and emissions of other pollutants that may cause cumulative effects.

Through the BSCP industry's responses to the 2008 EPA survey and the 2010 EPA survey, we have substantial information on the locations of BSCP plants and the levels of HF, HCl and Cl₂ emitted from those plants. BSCP plants are not commonly co-located with any other type of operations. They are typically located near the source of the raw materials on large tracts of land from which raw materials are extracted. This provides an additional buffer between the BSCP plants and the surrounding area. Because of the relatively low plume heights, maximum risks from the BSCP plants are located close to the facility property line. In trying to define cumulative risks from nearby non-BSCP emissions, the location and emissions associated with other sources not in the BSCP Manufacturing source category are far less certain. While the EPA 2008 survey and EPA 2010 survey data for BSCP facilities have been reviewed by EPA engineers and scientists, the emissions levels and locations of nearby other facilities, such as those in the NEI, have not undergone the same level of detailed review. Thus, a quantitative analysis of nearby emissions may contain significant uncertainty. However, as discussed above, because of the large footprint of BSCP facilities, their rural locations and the BSCP risks being

confined to the near plant locations, we do not expect that the combined emissions of HF, HCl or Cl₂ from BSCP facilities and nearby other sources would result in substantial cumulative health and environmental effects.

3. How did the EPA set the level of the standard?

Based on the EPA's findings, including the minimal cumulative health and environmental effects expected from co-located and nearby sources, the minimal co-benefits of setting technology-based MACT standards for acid gases, the minimal ecosystem impacts from setting a health-based standard in place of a MACT standard and the availability of data to determine a health-based standard, the EPA is proposing to exercise its discretion to use CAA section 112(d)(4). This conclusion is consistent with the EPA's prior decisions where we found it appropriate not to exercise the discretion to invoke the authority in CAA section 112(d)(4) for acid gases, because the circumstances in this case differ from those previous considerations. We request comment on the analysis and conclusions regarding setting health-based standards.

Following from the EPA's determination that a health-based standard is appropriate, the standard must be set as follows:

- There must be an ample margin of safety to avoid the health effects on which the threshold is based.
- There must be no observable adverse effect.

- The standard must not allow greater adverse environmental effects than the MACT standard that would otherwise be established.
- A standard must be set; there can be no exclusions from compliance based on a showing that the source's emissions do not pose a health risk.

CAA section 112(d)(4) expressly states that the health-based standard must be set at the threshold level "with an ample margin of safety." In addition, the legislative history of CAA section 112(d)(4) indicates that a health-based emission limit under CAA section 112(d)(4) should be set at the level at which no observable effects occur, with an ample margin of safety.²⁹ Because the statute requires an ample margin of safety, it would be reasonable to set any CAA section 112(d)(4) emission standard for a pollutant with a health threshold at a level that at least assures that, for the sources in the controlled category or subcategory, persons exposed to emissions of the pollutant would not experience the adverse health effects on which the threshold is based.³⁰ The legislative history also states that establishing a CAA section 112(d)(4) standard rather than a conventional MACT standard "shall not result in adverse environmental effects which would otherwise be reduced or eliminated."³¹

²⁹ See Boiler MACT Proposed Rule, 75 FR 32006, 32030/2 (June 4, 2010), citing S.Rep. 101-228 at 171-72.

³⁰ See Boiler MACT Proposed Rule, 75 FR 32006, 32031/3 (June 4, 2010).

³¹ See Portland Cement NESHAP Final Rule, 75 FR 54970, 54985/2 (September 9, 2010), citing S.Rep. 101-228 at 171-72.

The EPA's decision to exercise its discretion to use CAA section 112(d)(4) will not be used to exclude sources from compliance. The EPA does not believe that a plain reading of the statute supports the establishment of an approach in which the EPA excludes specific facilities from complying with emissions limits if the facility demonstrates that its emissions do not pose a health risk. While CAA section 112(d)(4) authorizes the EPA to consider the level of the health threshold for pollutants which have an established threshold, that threshold may be considered when establishing emissions standards under CAA section 112(d). Therefore, the EPA must still establish emissions standards under CAA section 112(d) even if it chooses to exercise its discretion to consider an established health threshold.³²

As part of the development of the proposed standards, we have maintained an inventory of major source facilities, including the size and operating hours of each tunnel kiln and the geographic location and physical attributes (e.g., stack height, diameter, exit gas flow rate) of each tunnel kiln stack. To develop a health-based emission limit, both long-term and short-term inhalation exposure concentrations and health risks from the BSCP manufacturing source category were estimated using

³² See Boiler MACT Final Rule, 76 FR 15608, 15643/3-14644/1 (March 21, 2011). See also MATS Final Rule, 77 FR 9304, 9406/1 (February 16, 2012) (same point using nearly identical text).

the Human Exposure Model (Community and Sector HEM-3 version 1.3.1). The HEM-3 performs three primary risk assessment activities: (1) conducting dispersion modeling to estimate the concentrations of HAP in ambient air, (2) estimating long-term and short-term inhalation exposures to individuals residing within 50 kilometers of the modeled sources and (3) estimating individual and population-level inhalation risks using the exposure estimates and quantitative dose-response information.

The air dispersion model used by the HEM-3 model (AERMOD) is one of the EPA's preferred models for assessing pollutant concentrations from industrial facilities. To perform the dispersion modeling and to develop the preliminary risk estimates, HEM-3 draws on three data libraries. The first is a library of meteorological data, which is used for dispersion calculations. This library includes one year (2011) of hourly surface and upper air observations for 824 meteorological stations, selected to provide coverage of the United States and Puerto Rico. A second library of United States Census Bureau census block internal point locations and populations provides the basis of human exposure calculations.³³ In addition, for each census block, the census library includes the elevation and controlling hill height, which are also used in dispersion

³³ USEPA Human Exposure Model; available at <http://www2.epa.gov/fera/download-human-exposure-model-hem>.

calculations. A third library of pollutant unit risk factors and other health benchmarks is used to estimate health risks. These risk factors and health benchmarks are the latest values recommended by the EPA for HAP and other toxic air pollutants. The chronic and acute values for the acid gases evaluated in this assessment are presented in Tables 7 and 8 of this preamble, respectively. Further information on the development and sources of these benchmarks and the overall modeling approach is presented in the technical memorandum, "Risk Assessment to Determine a Health-Based Emission Limitation for Acid Gases for the Brick and Structural Clay Products Manufacturing Source Category" in Docket ID No. EPA-HQ-OAR-2013-0291.

Table 7—Dose-Response Values for Chronic Inhalation Exposure to Acid Gases

Pollutant	CAS Number ^a	RfC (mg/m ³)	Source
Hydrogen chloride	7647010	0.02	IRIS
Hydrogen fluoride	7664393	0.014	CalEPA
Chlorine	7782505	0.00015	ATSDR

^a Chemical Abstract Services identification number. For groups of compounds that lack a CAS number, we have used a surrogate 3-digit identifier corresponding to the group's position on the CAA list of HAP.

Table 8—Dose-Response Values for Acute Inhalation Exposure to Acid Gases^a

Pollutant	CAS Number	AEGL-1 (1-hr) (mg/m ³)	AEGL-2 (1-hr) (mg/m ³)	ERPG-1 (mg/m ³)	ERPG-2 (mg/m ³)	REL
Hydrogen chloride	7647010	2.7	33	4.5	30	2.1
Hydrogen fluoride	7664393	0.82	20	1.6	16	0.24

Pollutant	CAS Number	AEGL-1 (1-hr) (mg/m ³)	AEGL-2 (1-hr) (mg/m ³)	ERPG-1 (mg/m ³)	ERPG-2 (mg/m ³)	REL
Chlorine	7782505	1.5	5.8	2.9	8.7	0.21

^a AEGL = Acute Exposure Guideline Level, ERPG = Emergency Response Planning Guideline

In developing the risk assessment for chronic exposures, we used the estimated annual average ambient air concentrations of each acid gas emitted by each source in the source category. The air concentrations at each nearby census block centroid were used as a surrogate for the chronic inhalation exposure concentration for all the people who reside in that census block. Chronic noncancer health hazards are expressed by comparing a chronic exposure to a reference level as a ratio. The HQ is the estimated exposure divided by a reference level (e.g., the RfC). For a given acid gas, exposures at or below the reference level (HQ less than or equal to 1) are not likely to cause adverse health effects. As exposures increase above the reference level (HQs increasingly greater than 1), the potential for adverse effects increases. For a typical risk assessment where multiple pollutants are co-emitted, we aggregate noncancer HQs of HAP that act by similar toxic modes of action or (where this information is absent) that affect the same target organ. This process creates, for each target organ, a specific hazard index (TOSHI) defined as the sum of HQs for individual HAP that affect the same organ or organ system. Because we performed HEM-

3 model runs for each acid gas individually, we did not aggregate HQ values of different acid gases. Of course, multiple acid gas pollutants are emitted at BSCP facilities, but a 250 tpy level of HCl-equivalent emissions (based on the HEM risks modeling) ensures that a TOSHI of 1 is not exceeded as long as the HCl-equivalent emissions do not exceed 250 tpy. It is important to note that this emission limit is only applicable to the sources in this source category and should not be considered for sources other than those included in this analysis.

Equivalent emissions for other acid gases are determined by the ratio of the chronic RfCs to that for HCl, such that the HCl-equivalent emissions for HF are 175 tpy and for Cl₂ are 1.9 tpy.

For the assessment of potential health risks from acute exposures to the acid gases, we performed a screening assessment using conservative assumptions that in combination approximate a worst-case exposure. The acute exposure scenario assumed worst-case meteorology (from one year of local meteorology) and that a person is located downwind at the point of maximum impact during this same worst-case 1-hour period, but no nearer to the source than 100 meters, which is conservative for this industry given our understanding of the locations of these facilities.

Screening for potentially significant acute inhalation exposures also followed the HQ approach. We divided the maximum estimated acute exposure by each available short-term threshold

value to develop an array of HQ values relative to the various acute endpoints and thresholds. In general, when none of these HQ values are greater than 1, there is low potential for acute risk. In those cases where HQ values above 1 are seen, additional information is used to determine if there is a potential for significant acute risks. Additional information for facilities in the BSCP manufacturing source category included using aerial imagery of the facilities to determine the maximum offsite 1-hour concentrations.

Because the emissions equivalency was based on chronic dose-response values, the 250 tpy level does not necessarily ensure that acute reference levels will not be exceeded. For the HCl and Cl₂ model runs, there were no facilities with acute screening HQ values exceeding 1. For HF, we estimate that four of the 91 facilities examined had an acute value exceed the REL, with the highest being 2. However, no facility exceeded an HQ (AEGL-1) value for HF. To assure that no source emits more than the 250 tpy HCl-equivalent limit in a single hour, we propose setting the emissions limit at the hourly equivalent of 250 tpy (57 lb/hr of HCl-equivalent emissions).

It is important to note that the above emissions thresholds are developed from back-calculating the emissions that would result in an HQ of 1 at the worst-case facility. Potential risks

at other facilities (not the worst-case facility) are predicted to be well below 1.

Because we had site-specific data on the operation of each tunnel kiln, we were able to use dispersion modeling to ensure that (1) the health-based emission limit cited above for BSCP facilities provides an ample margin of safety and (2) persons exposed to emissions of the pollutant would not experience the adverse health effects on which the threshold is based. In addition, as stated previously, the levels of acid gas emissions associated with BSCP kilns, based on results from the EPA's environmental risk screen methodology outlined above, are not expected to have an adverse environmental impact.

Facilities would demonstrate compliance with the health-based emission limit by determining their facility-wide HCl, HF and Cl₂ emissions, calculating the HCl-equivalent emissions for HF and Cl₂ using RfC values and adding the HCl emissions to the HCl-equivalent values to calculate the total HCl-equivalent emissions. An equation to perform this calculation is provided in the proposed BSCP manufacturing rule. For more information on the development of the health-based standard see the technical memorandum "Risk Assessment to Determine a Health-Based Emissions Limitation for Acid Gases for the Brick and Structural Clay Products Manufacturing Source Category" in Docket ID No. EPA-HQ-OAR-2013-0291. For more information on the calculation of

an HCl-equivalent value, see the technical memorandum

"Development of Cost and Emission Reduction Impacts for the BSCP NESHAP" in Docket ID No. EPA-HQ-OAR-2013-0291.

K. How did the EPA determine whether to set work practice standards for existing and new sources?

Under CAA section 112(h), the EPA may set work practice standards in place of an emissions standard where it is not feasible to prescribe or enforce an emission standard. The EPA is proposing to conclude that an emissions standard for certain HAP from certain BSCP manufacturing sources is not feasible because the application of measurement methodology to certain sources is not practicable due to technological and economic limitations. Specifically, the EPA is proposing a work practice standard for BSCP periodic kilns in lieu of emission limits for acid gases (HF, HCl and Cl₂), Hg and non-Hg HAP metals. The EPA is also proposing a work practice standard for dioxin/furan emissions from BSCP tunnel kilns in lieu of a dioxin/furan emission limit. The rationale for these work practice standards is discussed in the paragraphs below. We request comment on how the work practice standards were developed and the proposed standards themselves.

1. Periodic Kilns

a. Rationale for Setting Work Practice Standard in Lieu of Emission Standard

Overview. Periodic kilns are batch process units that are used for firing BSCP under a carefully controlled environment. The large majority of BSCP are fired in tunnel kilns, which operate continuously and are much more energy-efficient than periodic kilns when producing BSCP of a uniform type, such as standard building bricks. In contrast, periodic kilns can readily accommodate variations in firing temperature profiles and cycle times to match the requirements of a wide variety of products. As a result, periodic kilns generally are reserved for specialty products and typically are used only when necessary.³⁴

In the BSCP industry, periodic kilns are classified as either beehive kilns or shuttle kilns, but all operate generally the same. A batch of unfired bricks or shapes is loaded into the cold kiln, the kiln is sealed and the burners are ignited and controlled to carefully increase the temperature according to a time-temperature profile specific to the products being manufactured. Once firing is complete, the temperature in the kiln is reduced, the burners are extinguished and the fired product is allowed to cool. When the product is at or near

³⁴ See the memorandum titled "Rationale for Establishing Work Practice Standards for Periodic Brick Kilns" in Docket ID No. EPA-HQ-OAR-2013-0291.

ambient temperature, the kiln is opened and the fired products are removed.³⁵

Based on responses to the 2008 EPA survey sent to the BSCP industry, periodic kiln cycle times range from 35 to 168 hours per cycle and typically take 48 to 58 hours. These cycle times cover the period beginning when the burners are first ignited and ending when the burners are cut off. It may take an additional 8 to 10 hours for the fired products to cool before they can be removed from the kiln.³⁶

Emissions. Based on limited data from the testing of three BSCP periodic kilns using Method 320 (Fourier transform infrared (FTIR) spectroscopy), emissions of HF and HCl begin within the first 5 to 10 hours of the firing cycle and continue throughout the firing cycle. Emissions are highly variable and can experience large spikes at various points throughout the cycle. In addition, it is likely that emissions continue beyond the completion of the firing cycle, as the fired products cool. HF concentrations in the kiln exhaust can still exceed 100 parts per million at the end of the firing cycle.³⁷

Testing Periodic Kilns for Emissions of HF and HCl. The conventional compliance test requirement for most emission sources is to test each source for three 1-hour test runs. This

³⁵ Id.

³⁶ Id.

³⁷ Id.

requirement is based on the assumptions that the source operates continuously and that emissions are relatively constant.

However, there generally are some variations in emissions. For this reason, the source is tested over three separate runs and the results are averaged to generate a number that is representative of typical emissions.³⁸

Unlike continuous sources, emissions from BSCP periodic kilns can vary significantly over the course of one cycle. Because of these variations and the fact that emissions begin shortly after the start of the firing cycle and continue beyond the end of the cycle for an undetermined period of time, the conventional compliance test requirement of three 1-hour test runs cannot accurately measure emissions. Instead, the only way to accurately determine the total emissions from a BSCP periodic kiln cycle is to measure the emissions throughout the entire firing cycle and continuing beyond the completion of the cycle until emission levels become negligible. Testing for any less time could result in estimated emissions that are either much higher or much lower than actual emissions, depending on when during the kiln cycle emissions are sampled.³⁹

Because of the variations during firing cycles and variations across the tests, sampling a single kiln cycle is not

³⁸ Id.

³⁹ Id.

adequate for characterizing periodic kiln emissions, so more than one kiln cycle would have to be tested. Given that BSCP periodic kiln cycle times typically range from 48 to 58 hours, each periodic kiln would need to be tested for more than 100 hours in order to determine an emission rate that is representative of normal operating conditions. Also, because BSCP periodic kilns are used to fire specialty products that may have significantly differently time-temperature profiles, it would be necessary to test the same kiln multiple times to characterize emissions from different types of products.⁴⁰

Test Methods. The standard reference methods for measuring emissions of HF and HCl are EPA Methods 26 and 26A. These methods are reliable and relatively inexpensive. However, if emissions are variable and experience large spikes, as appears to be the case for BSCP periodic kilns, breakthrough of HCl can occur. That is, the testing apparatus reaches its capacity for absorbing HCl and subsequent HCl in the emissions are not captured. It is not known if breakthrough has occurred until a breakthrough analysis is performed after completion of the test. If it is determined that breakthrough has occurred, retesting is necessary. Another disadvantage to using Methods 26 or 26A for testing throughout periodic kiln cycles is the need for

⁴⁰ Id.

additional manpower to operate the sampling trains around the clock and to recover samples.⁴¹

An alternative to using Method 26 or 26A is to conduct the tests using FTIR according to EPA Method 320. With FTIR, HCl breakthrough is not an issue. In addition, FTIR also provides near real-time emissions data. However, as noted in the following section, the cost for testing by FTIR is expensive, similar to the cost for testing by Methods 26 or 26A throughout an entire cycle.⁴²

Emission Test Costs. The cost for testing by FTIR is estimated to be \$49,750 (2009 dollars) for a single 50-hour kiln cycle. If it were determined that the variations in emissions from cycle to cycle were significant, it would be necessary to test each kiln for two or more cycles in order to develop a representative emission rate. Testing for a second cycle would double the testing cost to almost \$100,000 and testing for a third cycle would triple the cost to almost \$150,000 (2009 dollars). In addition to these costs, additional costs would be incurred for testing the kilns for PM emissions, which would have to be tested using a manual test method (e.g., EPA Methods

⁴¹ Id.

⁴² Id.

5 or 17). If testing were extended into the cooling period, the costs would be even higher.⁴³

To address the potential economic impact of a requirement to test periodic kilns, we conducted a cost-to-sales assessment. (See the memorandum "Economic Feasibility of Testing Periodic Brick Kilns" in Docket ID No. EPA-HQ-OAR-2013-0291.) The conclusion that testing is not economically feasible for most of the kilns is quite clear. Over half of the kilns included in the analysis have estimated cost-to-sales percentages greater than 3 percent. The economic analysis estimates that for the upper end of the closure estimate for the other kilns when the costs are between 3 percent and 5 percent, one-quarter of the firms will close. This possibility of closure makes this level of costs for testing not economically feasible.

Feasibility of Numerical Emission Limits for Periodic Kilns. CAA section 112(h)(1) states that the Administrator may prescribe a work practice standard or other requirements, consistent with the provisions of CAA sections 112(d) or (f), in those cases where, in the judgment of the Administrator, it is not feasible to enforce an emission standard. CAA section 112(h)(2)(B) further defines the term "not feasible" in this context to apply when "the application of measurement technology

⁴³ Id.

to a particular class of sources is not practicable due to technological and economic limitations."

Because of the technological and economic limitations described above, we conclude that it is not practicable to establish numerical emission limits for BSCP periodic kilns. Demonstrating compliance with a numerical emissions limit for periodic kilns is technologically limited to testing procedures that are economically infeasible for the BSCP industry. Consequently, we are proposing a work practice standard for BSCP periodic kilns under CAA section 112(h).⁴⁴

b. Development of Work Practice Standard

Information provided to the EPA indicates there are six operational factors that have a direct bearing on HAP emissions from BSCP periodic kilns: temperature, firing cycle, product quality, automatic control, combustion control and kiln load/kiln technology.⁴⁵ These six operational factors and their impact on HAP emissions are described further in the paragraphs below.

Temperature. Various scientific test methods are used to study the reactions in brick clays during heating. Differential thermal analysis, thermo gravimetric analysis and simultaneous thermal analysis are techniques used to show the oxidation, de-

⁴⁴ Id.

⁴⁵ See the memorandum titled "Work Practice Standards for Periodic Kiln Operations," in Docket ID No. EPA-HQ-OAR-2013-0291.

hydroxylation and vitrification reactions, as well as the weight loss characteristics of the material. Knowledge of these reaction characteristics would enable the brick manufacturer to design the kiln firing cycle for the optimization of the product quality and to minimize process losses. Ensuring good product quality and minimizing process losses would eliminate the need for additional production firing cycles to meet the quantities demanded by the market, thereby avoiding the generation of additional HAP emissions.⁴⁶

Firing Cycle. Each periodic firing process in the brick industry is unique and is governed by the nature of the brick clay material being fired. For example, some shale materials have higher carbon and sulfur levels and require a longer "dwell" at the oxidation temperature range from 1,600 °F to 1,700 °F, while other clay materials are more refractory in nature and require higher final firing temperatures in order to develop the desired finished color and the physical properties to meet the ASTM standards required by the market. These factors influence the period of time in the oxidation stages, as well as the time required in the final "soak" stage of the firing cycle. HAP emissions have also been shown to take place in these stages

⁴⁶ Id.

of the firing cycle.⁴⁷ Consequently, knowledge of these factors is key to avoiding any additional emissions during these stages.

Product Quality. The time and temperature relationships previously described affect the ultimate quality and acceptability of the finished product. An "over-fired" product would produce excessive shrinkage, color variation and process losses. This type of firing cycle would likely produce higher HAP emissions per ton of ware fired. Similarly, an under-fired product would not meet durability standards required by the ASTM standards and the market. While under-firing the product would produce less HAP emissions, more product would have to be fired to meet production requirements, which would lead to more HAP emissions per sellable ton of ware. Therefore, any work practice standard would need to be a practice that produces the best product quality and the minimum HAP emissions. This optimized work practice would entail developing an optimum firing cycle for each particular brick clay body.⁴⁸

Automatic Control. The design of the kiln firing system influences the brick manufacturers' ability to achieve repeatable, maximum product quality results. Most periodic kiln operators in the brick industry have used modern programmable logic controller (PLC) technology for some time. These systems

⁴⁷ Id.

⁴⁸ Id.

enable the brick manufacturer to program the kiln firing temperature over a well-established, optimized time cycle, to achieve repeatable results. Modern high-velocity burner technology is commonly employed.⁴⁹ Achieving repeatable, maximum product quality results would eliminate the need to fire additional product to meet production requirements, thereby avoiding the generation of additional HAP emissions.

Combustion Control. The use of PLC technology enables the rate of gas delivery to the burner system to be accurately programmed, to ensure that each stage of the firing cycle is accurately controlled and to avoid over-firing or under-firing. The measuring devices that are part of the combustion equipment enable the kiln operator to adjust the air-to-fuel ratios in each stage, to achieve the optimum combustion efficiency needed to produce the desired product. In this way, the production of poor quality, rejects and losses is minimized. Technology that does not achieve this would produce higher losses and poor quality, resulting in additional production firing cycles being required to meet the quantities demanded by the market and additional HAP emissions.⁵⁰

Kiln Load/Kiln Technology. For proper combustion, it is important that the periodic kiln not be overloaded, as

⁴⁹ Id.

⁵⁰ Id.

overloading could cause improper combustion and lost product, resulting in additional production firing cycles and additional HAP emissions. To ensure proper firing, the following parameters should be addressed:⁵¹

- Employment of draft controls on exhaust fans to adjust exhaust volume flow.
- Measurement, monitoring and control of kiln pressure by adjustment of kiln exhaust.
- Measurement and monitoring of kiln temperatures.
- Measurement and control of air and fuel flow to the combustion system.

Work Practice Standard. Based on these six operational factors, the following work practice standard is proposed under CAA section 112(h):⁵²

- Each facility would have to develop and use a designed firing time and temperature cycle for each product produced in the periodic kiln, by programming the time and temperature cycle into the kiln or by tracking each step on a log sheet.
- Each facility would have to label each periodic kiln with the maximum load (in tons) that can be fired in the kiln during a single firing cycle.
- For each firing load, each facility would have to limit the total tonnage placed in the kiln to no more than the maximum load and document the total tonnage placed in the kiln to show that it is not greater than the maximum load.
- Each facility would have to develop and implement maintenance procedures for each kiln that specify the frequency of inspection and maintenance of the following items:
 - o Calibration of temperature measuring devices
 - o Controls that regulate air-to-fuel ratios
 - o Controls that regulate firing cycles

⁵¹ Id.

⁵² See the email titled "Periodic kiln language," in the docket for the proposed BSCP rulemaking.

- Each facility would have to develop and maintain records required for each periodic kiln, including logs to document the proper operation of the periodic kilns and logs of the maintenance procedures used to demonstrate compliance with the standard.

2. Dioxin/Furan Emissions

a. Rationale for Setting Work Practice Standard

The significant majority of measured dioxin/furan emissions from BSCP tunnel kilns are BDL and the EPA considers it impracticable to reliably measure dioxin/furan emissions from these units. (Note: Both dioxin/furan emissions and detection levels are in terms of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) toxic equivalents (TEQ).) The fact that the majority of measurements are so low casts doubt on whether the tests accurately measured the true levels of emissions. The dioxins/furans for each run were compared to one-half the RDL developed for utilities.⁵³ Overall, 15 out of 18 test runs (83 percent of the entire test run dataset) contained dioxin/furan estimates below one-half of the RDL. Based on the difficulties with accurate measurements at the levels of dioxins/furans encountered from tunnel kilns and the economics associated with units trying to apply measurement methodology to test for compliance with numerical limits, we are concluding that application of measurement methodology is not practicable and

⁵³ Johnson, S. Determination of "non-detect" from EPA Method 29 (multi-metals) and EPA Method 23 (dioxin/furan) test data when evaluating the setting of MACT floors versus establishing work practice standards. June 5, 2014.

are proposing to set a work practice standard under CAA section 112(h). We request comment on the rationale for setting work practice standards.

b. Work Practice Standard

The proposed work practice standard described below ensures that equipment is maintained and run so as to minimize emissions of dioxins and furans. The work practice would involve maintaining and inspecting the burners and associated combustion controls (as applicable), tuning the specific burner type to optimize combustion, keeping records of each burner tune-up and submitting a report for each tune-up conducted. Dioxins/furans are products of incomplete combustion (PIC) and optimizing combustion limits the formation of PIC, thereby minimizing emissions of dioxins/furans.

We are proposing that the tune-up must be conducted no less frequently than every 36 calendar months. Initial compliance with the work practice standard of maintaining burners must occur within 180 days of the compliance date of the BSCP manufacturing rule. The initial compliance demonstration for the work practice standard of conducting a tune-up must occur no later than 42 months (36 months plus 180 days) from the effective date of the final BSCP manufacturing rule. We request comment on the proposed work practice standards.

L. How did the EPA develop the startup and shutdown requirements?

As noted in section III.B of this preamble, tunnel kilns typically operate continuously, so startups and shutdowns are infrequent. Startup of a tunnel kiln involves starting up the burners based on a set procedure to raise the temperature of the kiln to the proper operational temperature for manufacturing bricks or structural clay products. Shutdown of a tunnel kiln is the process of cooling the kiln from the proper operational temperature by stopping the burners based on a set procedure. When the temperature of the kiln is below the proper operational temperature, BSCP manufacturers typically do not push new product into the kiln, so the emissions are not expected to be the same during startup and shutdown as during normal operations.

While the kiln is heating to the proper operational temperature during startup or cooling from the operational temperature during shutdown, other parameters such as exhaust flow rate, moisture content, O₂ concentration and pressure are also changing. In addition, the changes in these parameters may not happen smoothly and consistently as startup or shutdown progresses, as the kiln does not heat or cool evenly. The fluctuations in all these parameters are not consistent with the relatively steady-state conditions needed for valid, accurate

results over three test runs using the measurement methods proposed to be used to demonstrate compliance.

Even if testing were feasible during startup and shutdown, most of the emission limit formats chosen for this proposed BSCP manufacturing rule are not appropriate for use during periods other than normal operation. For example, if there is no throughput in the kiln, emission limits that are in a mass per throughput format would be essentially meaningless. In addition, the concentration based-standards are corrected to a specified O₂ concentration to avoid the use of dilution air to lower the measured concentration, but during startup and shutdown, the O₂ concentration in the kiln exhaust is likely to fluctuate. This means that even if an owner or operator could conduct an emissions test and measure the O₂ content during startup and shutdown for comparison to the O₂-corrected emission limit, the fluctuations in O₂ content and other parameters in the kiln mean that the O₂-corrected emissions are also fluctuating.

For tunnel kilns with an APCD, venting the kiln exhaust through the APCD at low temperatures can cause operational problems, including moisture in the bags of a baghouse or solidification of the lime in a DIFF. Therefore, the BSCP owners and operators that responded to the SSM portion of the 2010 EPA survey indicated that they bypass the APCD if the kiln exhaust temperature is below a "low temperature set point." Based on

information received through the 2010 EPA survey, this kiln exhaust temperature ranges from 284 to 400 °F for startup and from 150 to 300 °F for shutdown. All of the EPA survey respondents indicated that no new product is introduced to the kiln as long as the APCD is bypassed, so that emissions are minimized.

Therefore, we are proposing work practice standards for periods of startup and shutdown for BSCP tunnel kilns with APCD. For startup, the owner or operator would be required to vent the exhaust from the kiln through the APCD by the time the kiln exhaust temperature reaches 400 °F. In addition, no bricks or other product may be introduced to the kiln until the kiln exhaust temperature reaches 400 °F and the exhaust is being vented through the APCD. For shutdown, the owner or operator would be required to vent the exhaust from the kiln through the APCD until the kiln exhaust temperature falls below 300 °F. In addition, no bricks or other product may be put into the kiln once the kiln exhaust temperature falls to 300 °F and the exhaust is no longer being vented through the APCD. When the kiln exhaust is being vented through the APCD, the owner or operator would be required to comply with the applicable continuous compliance requirements described in section III.G of this preamble.

For kilns that can meet the proposed standards without an APCD, there are no concerns about damaging an APCD or procedures for bypassing an APCD. In addition, we did not receive any data through the 2010 EPA survey regarding startup and shutdown of uncontrolled kilns. However, as noted above, we recognize that it is not feasible to conduct emission testing during periods of startup and shutdown. Therefore, we are proposing work practice standards for periods of startup and shutdown for BSCP tunnel kilns without an APCD. For startup, no bricks or other product may be introduced to the kiln until the kiln exhaust temperature reaches 400 °F. For shutdown, no bricks or other product may be put into the kiln once the kiln exhaust temperature falls to 300 °F. When there are bricks in the kiln, the owner or operator would be required to comply with the applicable continuous compliance requirements described in section III.G of this preamble.

M. How did the EPA select the compliance requirements?

We are proposing testing and monitoring requirements that are adequate to assure continuous compliance with the requirements of this proposed BSCP manufacturing rule. These requirements are described in detail in sections III.F and III.G of this preamble. We selected these requirements based upon our determination of the information necessary to ensure that the emission standards are being met and the work practices are

being followed and that APCD and equipment are maintained and operated properly. Further, these proposed requirements ensure compliance with this proposed BSCP manufacturing rule without imposing a significant additional burden for facilities that must implement them.

We are proposing that initial compliance with the emission limits for HF, HCl, Cl₂, PM (or non-Hg HAP metals) and Hg be demonstrated by an initial performance test. The proposed BSCP manufacturing rule would also require 5-year repeat performance tests to ensure, on an ongoing basis, that the APCD is operating properly and that its performance has not deteriorated.

The majority of test methods that this proposed BSCP manufacturing rule would require for the performance stack tests (e.g., EPA Methods 5, 26A and 29) have been required under many other EPA standards. Many of the emissions tests upon which the proposed emission limits are based were conducted using these test methods.

When a performance test is conducted, we are proposing that parameter operating limits be determined during the test. To ensure continuous compliance with the proposed emission limits, the proposed BSCP manufacturing rule would require continuous parameter monitoring of the kilns and APCD and maintaining these parameters within the operating limits established during the performance test. We selected these parameter monitoring

requirements because they produce data that will be useful to both the owners or operators and the EPA for ensuring continuous compliance with the emission limits and/or operating limits and because of their reasonable cost and ease of execution.

The APCD monitoring parameters included in the proposed rule were chosen for the types of APCD commonly used in the BSCP industry or anticipated to be used to comply with the proposed emission limits. These parameters include lime injection rate (on a per ton of fired product basis) for DIFF and DLS/FF; pressure drop (or bypass stack damper position) and limestone feeder setting for DLA; pressure drop, pH, liquid flow rate and chemical addition rate (if applicable) for wet scrubbers; and activated carbon flow rate for ACI systems. If applicable for demonstrating compliance with the HF/HCl/Cl₂ standard, the kiln monitoring parameter included in the proposed BSCP manufacturing rule is the kiln process rate. Many of these CPMS are standard features on BSCP tunnel kilns and their associated APCD and have also been used in other standards for similar industries.

In addition to parameter monitoring, the proposed BSCP manufacturing rule also includes a requirement for kilns equipped with a FF (e.g., a DIFF, DLS/FF or stand-alone FF) to either install a BLD system or monitor VE. Similar to the CPMS being proposed, BLD systems have also been used in other standards in similar industries. We have also determined that

periodic VE checks are a reasonable alternative to BLD systems for this proposed BSCP manufacturing rule. Periodic VE checks have also been proposed for kilns without an add-on control to demonstrate continuous compliance.

N. How did the EPA determine compliance times for the proposed rule?

Section 112 of the CAA specifies the dates by which affected sources must comply with the emission standards. Under CAA section 112(i)(1), new or reconstructed units must be in compliance with this proposed rule immediately upon startup or the effective date of the final rule, whichever is later. (The final action is expected to be a "major rule" as defined by 5 U.S.C. 804(2), so the effective date of the final rule is expected to be 60 days after the final rule is published in the Federal Register.)

Under CAA section 112(i)(3), existing sources are allowed up to 3 years after the effective date of the rule to comply with the final rule. For this industry, we believe that 3 years for compliance is necessary to allow adequate time to design, install and test any control systems that may need to be retrofitted onto existing kilns, as well as obtain permits for the use of add-on controls.

The compliance date for existing area sources that subsequently become major sources is governed by 40 CFR

63.6(c)(5). We are proposing that such sources have 3 years from the date they become major sources to come into compliance, which is equivalent to the compliance period for existing sources discussed in the previous paragraph. Further, under the current regulations in 40 CFR 63.6(b)(7), where an area source becomes a major source by the addition of equipment or operations that meet the definition of new affected source under this rule, that portion of the existing facility that is a new affected source must be in compliance upon initial startup.

O. How did the EPA determine the required records and reports for the proposed rule?

The owner or operator would be required to comply with the applicable requirements in the NESHAP General Provisions, subpart A of 40 CFR part 63, as described in Table 8 of the proposed BSCP manufacturing rule. We evaluated the General Provisions requirements and included those we determined to be the notification, recordkeeping and reporting necessary to ensure compliance with and effective enforcement of this proposed BSCP manufacturing rule.

We are also proposing that the owner or operator keep records on the firing time and temperature cycle for each periodic kiln, the type of product fired in each batch and the amount of product fired in the periodic kiln, to address the operational factors that impact HAP emissions from periodic

kilns and demonstrate compliance with the work practice standard for periodic kilns (discussed further in section IV.K.1 of this preamble).

In addition, we are proposing that the owner or operator keep records and submit a report of each burner tune-up that is conducted to ensure good combustion practice and minimize the formation of dioxins/furans from incomplete combustion, to demonstrate compliance with the dioxin/furan work practice standard for tunnel kilns (discussed further in section IV.K.2 of this preamble).

We are also proposing that the owner or operator keep records and submit a report of each malfunction and the corrective action taken as part of the next semiannual compliance report. The proposed compliance report would provide information on each type of malfunction which occurred during the reporting period and which caused or may have caused an exceedance of an emission limit.

This proposed BSCP manufacturing rule also includes a requirement for electronic reporting of performance test data, which is discussed further in section III.I of this preamble.

We request comment on ways that we could streamline the recordkeeping and reporting requirements of the proposed BSCP manufacturing rule by relying on existing business practices.

P. How does the proposed rule affect permits?

The CAA requires that sources subject to the BSCP manufacturing rule, once finalized, be operated pursuant to a permit issued under an EPA-approved state operating permit program. The operating permit programs are developed under title V of the CAA and the implementing regulations under 40 CFR parts 70 and 71. If the facility is operating in the first 3 years of an operating permit, the owner or operator will need to obtain a revised permit to incorporate the requirements of this BSCP manufacturing rule. If the facility is in the last 2 years of an operating permit, the owner or operator will need to incorporate the requirement of this BSCP manufacturing rule into the next renewal of the permit.

Q. What are the alternate approaches the EPA is considering?

1. Alternate Non-Hg HAP Metals Standards

As noted in section IV.E of this preamble, the proposed emission limits for total non-Hg HAP metals and PM are based on the best performing 27 kilns with a DIFF or DLS/FF (i.e., 12 percent of the kilns in the industry). Instead of these proposed limits, we are considering an alternate approach of setting emission limits for total non-Hg HAP metals and PM based on MACT floors calculated using the top 12 percent of the data available in each of the kiln size subcategories, similar to the procedure we followed for setting the Hg limits.

The alternate PM limits were calculated using the same procedure as described in section IV.E for Hg. In other words, the kilns were ranked within each subcategory on the basis of their lb/ton PM emissions and the top 12 percent best performing kilns were identified (top 9 large kilns and top 3 small kilns). Both the PM lb/ton limit and the concentration limit for existing sources were calculated based on those top 12 percent. The alternate PM lb/ton limit and the concentration limit for new sources were calculated based on the best performing source in each subcategory.

As discussed in section IV.G of this preamble, the EPA must take considerations when dealing with limited datasets. For the BSCP alternate options, we have limited datasets for the following pollutants and subcategories: PM for new large tunnel kilns and PM for new small tunnel kilns. For each dataset, we performed the steps outlined in the Limited Dataset Memo. See the Limited Dataset Memo for more information.

The alternate total non-Hg HAP metals limit was calculated using a similar methodology as the proposed total non-Hg HAP metals limit. Since the alternate total non-Hg HAP metals limits were calculated based on smaller datasets, we found that there were no small kilns in the top three best performing kilns with both PM and non-Hg HAP metals data and only one large kiln in the top nine best performing kilns with both PM and non-Hg HAP

metals data. Therefore, the alternate large kiln total non-Hg HAP metals limit for existing sources was calculated by multiplying the alternate PM lb/ton limit by the throughput and the percentage of non-Hg HAP metals measured in the PM during that test. The alternate small kiln non-Hg HAP metals limit for existing sources was then set equal to the existing source large kiln non-Hg HAP metals limit. For new sources, the best performing unit in the PM new source MACT floor pool did not have any non-Hg HAP metals data. Therefore, the alternate large kiln total non-Hg HAP metals limit for new sources was calculated using the average throughput and the average percentage of non-Hg HAP metals measured during tests for kilns with a FF-based APCD. The alternate small kiln non-Hg HAP metals limit for new sources was then set equal to the new source large kiln non-Hg HAP metals limit.

The alternate emissions limits for existing and new sources are presented in in the technical memorandum "Maximum Achievable Control Technology (MACT) Floor Analysis for Brick and Structural Clay Products" in Docket ID No. EPA-HQ-OAR-2013-0291. We request comment on the calculation methodology used to generate these alternate limits, which is described in the technical memorandum "Maximum Achievable Control Technology (MACT) Floor Analysis for Brick and Structural Clay Products" in Docket ID No. EPA-HQ-OAR-2013-0291), as well as comment on

whether we should use these limits instead of the limits we are proposing.

2. HAP Metals Work Practice Standard

In the recommendations of the Small Business Advocacy Review (SBAR) Panel, members of the BSCP manufacturing industry discussed whether work practice standards for Hg and non-Hg HAP metals would be more appropriate for BSCP tunnel kilns than emissions limits for these pollutants. BSCP manufacturing industry representatives noted the high percentage of test runs below the respective detection limits in the tests results for each metal as support for this suggestion.

We reviewed the available stack test data for Hg and non-Hg HAP metals from BSCP tunnel kilns to evaluate this suggestion. For Hg, we found that all test runs were actually above the detection limits. For the non-Hg HAP metals, we found that only one of the individual non-Hg HAP metals had a high percentage of test runs below the detection limit. We found a high percentage of test runs above the detection limits for all the other non-Hg HAP metals. For more information on this analysis, please see the technical memorandum "Determination of "Non-Detect" Test Data for the BSCP Proposed Rule" in Docket ID No. EPA-HQ-OAR-2013-0291.

Because Hg and most of the non-Hg HAP metals are emitted from BSCP kilns in detectable levels, the EPA believes it is

technologically practicable to measure these emissions and they do not meet the statutory prerequisite for work practice standards under CAA section 112(h). Consequently, we have declined to propose work practice standards for Hg or non-Hg HAP metals. Although we are not proposing work practices for HAP metals, we are requesting comment on this issue. We are specifically asking for emissions data or any other information relevant to the issue of whether the metals emissions from these sources meet the statutory prerequisite for work practice standards in CAA section 112(h).

3. Emissions Averaging

As part of the EPA's general policy of encouraging the use of flexible compliance approaches where they can be properly monitored and enforced, we are also requesting comment in this proposed rule on whether to include emissions averaging as an alternative to the individual MACT floor emission limits in the proposed rule. Specifically, the EPA is requesting comment on whether to consider alternative emissions averaging limits for PM (in units of lb/ton or gr/dscf at 7 percent O₂) and total non-Hg HAP metals (in units of lb/hr) for existing tunnel kilns. Emissions averaging can provide sources the flexibility to comply in the least costly manner while still maintaining regulation that is workable and enforceable. Emissions averaging would not be applicable to new sources and could only be used

between existing tunnel kilns in the same size subcategory (large or small) at a particular BSCP facility.

Emissions averaging would allow owners and operators of an affected source to demonstrate that the source complies with the emission limits by averaging the emissions from an individual affected unit that is emitting above the emission limits with other affected units at the same facility that are emitting below the emission limits.

We are requesting comment on whether to include an emissions averaging compliance alternative in which emissions averaging represents an equivalent, more flexible, and less costly alternative to controlling certain emission points to MACT levels. A limited form of averaging could be implemented that would not lessen the stringency of the MACT floor limits and would provide flexibility in compliance, cost and energy savings to owners and operators. We also recognize that we must ensure that any emissions averaging option can be implemented and enforced, will be clear to sources, and would be no less stringent than unit by unit implementation of the MACT floor limits.

The EPA has concluded that it is permissible under the appropriate circumstances to establish within a NESHAP a unified compliance regimen that permits averaging within an affected source across individual affected units subject to the standard

under certain conditions. Averaging across affected units is permitted only if it can be demonstrated that the total quantity of any particular HAP that may be emitted by that portion of a contiguous major source that is subject to the NESHAP will not be greater under the averaging mechanism than it could be if each individual affected unit complied separately with the applicable standard. Under this test, the practical outcome of averaging is equivalent to compliance with the MACT floor limits by each discrete unit, and the statutory requirement that the MACT standard reflect the maximum achievable emissions reductions is, therefore, fully effectuated.

In past rulemakings, the EPA has generally imposed certain limits on the scope and nature of emissions averaging programs. These limits include: (1) no averaging between different types of pollutants, (2) no averaging between sources that are not part of the same affected source, (3) no averaging between individual sources within a single major source if the individual sources are not subject to the same NESHAP, and (4) no averaging between existing sources and new sources.

Any emissions averaging alternative to the proposed rule requirements would fully satisfy each of these criteria. First, emissions averaging would only be permitted between individual sources at a single existing affected source, and would only be permitted between individual sources subject to the Brick and

Structural Clay NESHAP. Further, emissions averaging would not be permitted between two or more different affected sources or between two or more sources in different subcategories. Finally, new sources could not use emissions averaging. In addition, any emissions averaging alternative would require each facility that intends to utilize emissions averaging to submit an emissions averaging plan, which provides additional assurance that the necessary criteria will be followed. In such an emissions averaging plan, the facility would include the identification of: (1) all units in the averaging group, (2) the control technology installed, (3) the process parameter that will be monitored, (4) the specific control technology or pollution prevention measure to be used, (5) the test plan for the measurement of the HAP being averaged, and (6) the operating parameters to be monitored for each control device. Upon receipt, the regulatory authority would not be able to approve an emissions averaging plan containing averaging between emissions of different types of pollutants or between sources in different subcategories.

This emissions averaging alternative would also exclude new affected sources from the emissions averaging provision. The EPA believes emissions averaging is not appropriate for new sources because it is most cost effective to integrate state-of-the-art controls into equipment design and to install the technology

during construction of new sources. One reason to allow emissions averaging under certain circumstances is to give existing sources flexibility to achieve compliance at diverse points with varying degrees of add-on control already in place in the most cost-effective and technically reasonable fashion. This flexibility is not needed for new sources because they can be designed and constructed with compliance in mind.

With concern about the equivalency of emissions reductions from averaging and non-averaging in mind, we would also include under the emissions averaging provision caps on the current emissions from each of the sources in the averaging group. The emissions for each unit in the averaging group would be capped at the emission level being achieved on the effective date of the final rule. These caps would ensure that emissions do not increase above the emission levels that sources currently are designed, operated, and maintained to achieve. In the absence of performance tests, in documenting these caps, these sources would document the type, design, and operating specification of control devices installed on the effective date of the final rule to ensure that existing controls are not removed or operated less efficiently. By including this provision in this proposed rule, we would further ensure that emissions averaging results in environmental benefits equivalent to or better than without emissions averaging.

In addition, we would plan to include a discount factor of 10 percent that would be applied when emissions averaging is used. This discount factor will further ensure that averaging will be at least as stringent as the MACT floor limits in the absence of averaging. The EPA is soliciting comment on use of a discount factor and whether 10 percent is the appropriate discount factor or whether the appropriate discount factor is somewhere in the range of 5% to 25%. The emissions averaging provision would not apply to individual units if the unit shares a common stack with units in other subcategories, because in that circumstance it is not possible to distinguish the emissions from each individual unit.

The alternative emissions averaging provisions for which we are requesting comment in this proposed rule are based in part on the emissions averaging provisions in the Hazardous Organic NESHAP (HON). The legal basis and rationale for the HON emissions averaging provisions were provided in the preamble to the final HON (59 FR 19425, April 22, 1994).

4. Subcategories Based on Raw Materials

The Clean Air Act authorizes EPA to create subcategories which distinguish among "classes, types, and sizes of sources." Section 112(d)(1). EPA is taking comment on subcategorizing with regard to potential standards for mercury emitted by brick kilns. Were EPA to do so, each subcategory would have its own

floor and standard, reflecting performance of the sources within that subcategory.

The EPA may create a subcategory applicable to a single HAP, rather than to all HAP emitted by the source category, if the facts warrant. Normally, any basis for subcategorizing must be related to an effect on emissions, rather than to some difference among sources which does not affect emissions performance. The subcategorization possibility for mercury which we are considering is the mercury concentration of the raw materials in the kiln's clay mine, or geographic location.

The EPA does not have sufficient data to determine if mercury emissions correlate with the mercury content of the clay used as raw material by the kiln. Additionally, EPA does not have data that show to what extent mercury content of clay varies by kiln location (i.e., geographical distinction) or within a given source of clay, and to what extent a source could reduce mercury emissions by using an alternate source of clay with lower mercury content.

If data were available to show that the amount of mercury in the raw materials significantly affected mercury emissions, and that kilns could not reasonably use an alternative source of clay with lower mercury content, kilns using raw materials with higher mercury content might be considered a different type or

class of kiln because their process necessarily requires the use of that higher-mercury raw materials.

However, data are not available to support subcategorization based on the amount of mercury in the raw materials. Such data would need to show a correlation between raw material content and mercury emissions and also need to indicate sharp disparities in raw material mercury content that readily differentiate among types of sources. Additionally, data would also be needed to show that alternate sources of raw materials with lower mercury content are not available or feasible. We are specifically asking for mercury emissions data coupled with raw materials mercury data. We are also asking for information regarding the availability of low mercury clay and the feasibility of using low mercury clay to reduce emissions. EPA realizes that if this data is not currently available, obtaining this data may not be possible within the current schedule to promulgate the final rule. Therefore, EPA requests comment on possible approaches to resolve this issue.

V. Summary of the Proposed Rule for the Clay Ceramics

Manufacturing Category

This section summarizes the requirements for the Clay Ceramics Manufacturing source category proposed in today's action. Section VI of this preamble provides our rationale for the proposed requirements.

A. What source category is affected by the proposed rule?

Today's proposed rule for Clay Ceramics Manufacturing applies to clay ceramics manufacturing facilities that are located at or are part of a major source of HAP emissions. The Clay Ceramics Manufacturing source category includes those facilities that manufacture pressed floor tile, pressed wall tile and other pressed tile; or sanitaryware (toilets and sinks).

B. What are the affected sources?

The affected sources, which are the portions of each source in the category for which we are setting standards, are: (1) each ceramic tile roller kiln; (2) each floor tile press dryer; (3) each ceramic tile spray dryer; (4) each ceramic tile glaze line using glaze spraying; (5) each sanitaryware tunnel kiln; (6) each sanitaryware shuttle kiln; and (7) each sanitaryware glaze spray booth.

The following clay ceramics process units are not subject to the requirements of today's proposed rule: (1) kilns that are used exclusively for refiring or setting glazes on previously fired products; (2) glaze spray operations that use wet glazes containing less than 0.1 (weight) percent metal HAP (dry basis); (3) wall tile press dryers; and (4) sanitaryware ware dryers. See section VI.A for information on why these sources are not subject to the proposed rule.

C. Does the proposed rule apply to me?

This proposed Clay Ceramics manufacturing rule applies to owners or operators of an affected source at a major source meeting the requirements discussed previously in this preamble. A major source of HAP emissions is any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit, considering controls, 10 tpy or more of any HAP or 25 tpy or more of any combination of HAP.

D. What emission limitations and work practice standards must I meet?

1. Emission Limitations

We are proposing emission limits for PM as a surrogate for total non-Hg HAP metals for all new and existing ceramic tile roller kilns, sanitaryware tunnel kilns and ceramic tile and sanitaryware glazing operations. We are proposing emission limits for Hg for all new and existing ceramic tile roller kilns, ceramic tile glaze lines and sanitaryware tunnel kilns. We are proposing emission limits for dioxin/furan for all new and existing ceramic tile roller kilns, sanitaryware tunnel kilns, floor tile press dryers and ceramic tile spray dryers. We are also proposing an emission limit for HCl-equivalent for all existing and new roller and tunnel kilns at each facility to

reduce the acid gases HF and HCl. The proposed emission limits are presented in Table 9 of this preamble.

Table 9-Proposed Emission Limits for Clay Ceramics Sources

Subcategory	Acid gases (lb/hr HCl- equivalent) ^a	Hg (lb/ton)	PM ^b (lb/ton)	Dioxins/furans (ng/dscm at 7 percent O ₂) ^c
Limits for existing sources				
Floor tile roller kilns	140	1.3 E-04	0.18	4.6
Floor tile press dryers	--	--	--	0.19
Floor tile spray dryers	--	--	--	44
Wall tile roller kilns	140	2.0 E-04	0.20	0.17
Wall tile spray dryers	--	--	--	0.12
Tile glaze lines	--	1.6 E-04	1.9	--
First-fire sanitaryware tunnel kilns	140	1.2 E-04	0.33	1.5
Sanitaryware manual glaze application	--	--	33	--
Sanitaryware spray machine glaze application	--	--	12	--
Sanitaryware robot glaze application	--	--	8.8	--
Limits for new sources				
Floor tile roller kilns	140	3.9 E-05	0.027	1.5
Floor tile press dryers	--	--	--	0.19
Floor tile spray dryers	--	--	--	0.17
Wall tile roller kilns	140	2.0 E-04	0.20	0.17
Wall tile spray dryers	--	--	--	0.12
Tile glaze lines	--	1.6 E-04	0.61	--
First-fire sanitaryware tunnel kilns	140	1.2 E-04	0.095	0.37
Sanitaryware manual glaze application	--	--	3.8	--
Sanitaryware spray machine glaze application	--	--	3.2	--
Sanitaryware robot glaze application	--	--	2.2	--

^a Limit applies to all kilns at facility.

^b PM is a surrogate for non-Hg HAP metals.

^c ng/dscm = nanograms per dry standard cubic meter.

2. Work Practice Standards

We are proposing work practice standards in lieu of emission limits for acid gases (HF and HCl), Hg and non-Hg HAP metals for sanitaryware shuttle kilns. The work practice standards would require using natural gas (or equivalent) as kiln fuel except during periods of natural gas curtailment or supply interruption; developing and using a designed firing time and temperature cycle for each product produced in the shuttle kiln; labeling each shuttle kiln with the maximum load (in tons) that can be fired in the kiln during a single firing cycle; documenting the total tonnage placed in the kiln for each load to ensure that it is not greater than the maximum load; developing and implementing maintenance procedures for each kiln that specify the frequency of inspection and maintenance; and developing and maintaining records for each shuttle kiln, including logs to document the proper operation and maintenance procedures of the shuttle kilns.

E. What are the startup and shutdown requirements?

The EPA's position on SSM events is discussed in section II.B of this preamble. Standards for periods of startup and shutdown are discussed in this section.

We are proposing work practice standards for periods of startup and shutdown for ceramic tile roller kilns, floor tile press dryers, ceramic tile spray dryers and sanitaryware tunnel

kilns with APCD. For startup, the owner or operator would be required to vent the exhaust from the kiln through the APCD by the time the kiln exhaust temperature reaches 400 °F. In addition, no ceramics or other product may be introduced to the kiln until the kiln exhaust temperature reaches 400 °F and the exhaust is being vented through the APCD. For shutdown, the owner or operator would be required to vent the exhaust from the kiln through the APCD until the kiln exhaust temperature falls below 300 °F. In addition, no ceramics or other product may be introduced to the kiln once the kiln exhaust temperature falls to 300 °F and the exhaust is no longer being vented through the APCD. When the kiln exhaust is being vented through the APCD, the owner or operator would be required to comply with the applicable continuous compliance requirements described in section V.G of this preamble.

We are also proposing work practice standards for periods of startup and shutdown for ceramic tile roller kilns, floor tile press dryers, ceramic tile spray dryers and sanitaryware tunnel kilns without an APCD. For startup, no ceramics or other product may be introduced to the kiln or dryer until the kiln or dryer exhaust temperature reaches 400 °F. For shutdown, no ceramics or other product may be introduced to the kiln or dryer once the kiln or dryer exhaust temperature falls to 300 °F. When there are ceramics in the kiln or dryer, the owner or operator

would be expected to demonstrate compliance with the emissions limitations (as described in section V.G of this preamble).

We are not proposing alternate standards for periods of startup and shutdown for ceramic tile glaze lines or sanitaryware glaze spray booths. These sources would be expected to demonstrate compliance with the emissions limitations (as described in section V.G of this preamble) at all times when the source is operating, including periods of startup and shutdown.

F. What are the testing and initial compliance requirements?

We are proposing that owners or operators of all affected sources subject to emission limits conduct an initial performance test using specified EPA test methods to demonstrate initial compliance with all applicable emission limits. A performance test would need to be conducted before renewing the facility's 40 CFR part 70 operating permit or at least every 5 years following the initial performance test, as well as when an operating limit parameter value is being revised.

Under today's proposed Clay Ceramics manufacturing rule, the owner or operator would need to measure emissions of HF, HCl, Hg, PM (as a surrogate for non-Hg HAP metals) and dioxins/furans. The owner or operator would measure HF and HCl from ceramic tile roller kilns and sanitaryware first-fire tunnel kilns using one of the following methods:

- EPA Method 26A, "Determination of Hydrogen Halide and Halogen Emissions from Stationary Sources-Isokinetic Method," 40 CFR part 60, appendix A-8;
- EPA Method 26, "Determination of Hydrogen Chloride Emissions from Stationary Sources," 40 CFR part 60, appendix A-8, when no acid particulate (e.g., HF or HCl dissolved in water droplets emitted by sources controlled by a wet scrubber) is present;
- EPA Method 320, "Measurement of Vapor Phase Organic and Inorganic Emission by Extractive FTIR" 40 CFR part 63, appendix A, provided the test follows the analyte spiking procedures of section 13 of Method 320, unless the owner or operator can demonstrate that the complete spiking procedure has been conducted at a similar source; or
- Any other alternative method that has been approved by the Administrator under 40 CFR 63.7(f) of the General Provisions.

Following the performance test, the owner or operator would calculate the HCl-equivalent for the kiln using proposed Equation 4 in 40 CFR 63.8595(f)(4)(i). If there are multiple kilns at a facility, the owner or operator would sum the HCl-equivalent for each kiln using proposed Equation 5 in 40 CFR 63.8595(f)(4)(ii) to get the total facility HCl-equivalent and compare this value to the proposed limitation.

We are proposing that the owner or operator measure PM emissions from ceramic tile roller kilns and sanitaryware first-fire tunnel kilns using one of the following methods:

- EPA Method 5, "Determination of Particulate Emissions from Stationary Sources," 40 CFR part 60, appendix A-3;
- EPA Method 29, "Determination of Metals Emissions From Stationary Sources," 40 CFR part 60, appendix A-8, where the test results would report the weight of the PM on the filter as PM filterable; or

- Any other alternative method that has been approved by the Administrator under 40 CFR 63.7(f) of the General Provisions.

Method 29 or any other approved alternative method may also be used to measure Hg emissions from ceramic tile roller kilns, ceramic tile glaze lines and sanitaryware first-fire tunnel kilns.

We are proposing that the owner or operator measure PM emissions from ceramic tile and sanitaryware glaze spray booths using EPA Method 5 or any other alternative method that has been approved by the Administrator under 40 CFR 63.7(f) of the General Provisions.

We are also proposing that the owner or operator measure dioxin/furan emissions from ceramic tile roller kilns and spray dryers, floor tile press dryers and sanitaryware first-fire tunnel kilns using EPA Method 23, "Determination of Polychlorinated Dibenzop-Dioxins and Polychlorinated Dibenzofurans From Stationary Sources," 40 CFR part 60, appendix A-7 or any other alternative method that has been approved by the Administrator under 40 CFR 63.7(f) of the General Provisions.

The following paragraphs discuss the initial compliance requirements that are being proposed. Prior to the initial performance test, the owner or operator would need to install the CPMS equipment to be used to demonstrate continuous

compliance with the operating limits. During the initial test, the owner or operator would use the CPMS to establish site-specific operating parameter values that represent the operating limits.

For a DIFF or DLS/FF, we are proposing that the owner or operator ensure that lime in the feed hopper or silo and to the APCD is free-flowing at all times during the HF/HCl performance test and record the feeder setting (on a per ton of fired product basis) for the three test runs. If the lime feed rate varies, the owner or operator would be required to determine the average feed rate from the three test runs. The average of the three test runs establishes the minimum site-specific feed rate operating limit. If there are different average feed rate values during the PM and HF/HCl tests, the highest of the average values becomes the site-specific operating limit. If a BLD system is present, the owner or operator would need to submit analyses and supporting documentation demonstrating conformance with EPA guidance and specifications for BLD systems.

For a stand-alone FF (i.e., no dry sorbent injection or DLS) and a BLD system, we are proposing that the owner or operator submit analyses and supporting documentation demonstrating conformance with EPA guidance and specifications for BLD systems.

For a wet scrubber, we are proposing that the owner or operator continuously measure the scrubber pressure drop during the PM performance test, the scrubber liquid pH and the chemical addition rate (if applicable) during the HF/HCl performance test and the scrubber liquid flow rate during both the PM and HF/HCl performance tests. For each wet scrubber parameter, the owner or operator would need to determine and record the average values for the three test runs and the 3-hour block average value. The average of the three test runs establishes the minimum site-specific pressure drop, liquid pH, liquid flow rate and chemical addition rate operating limits. If different average wet scrubber liquid flow rate values are measured during the PM and HF/HCl tests, the highest of the average values become the site-specific operating limits.

For an ACI system, we are proposing that the owner or operator measure the activated carbon flow rate during the Hg and dioxin/furan performance tests and determine the 3-hour block average flow rate. The average of the three test runs establishes the minimum site-specific activated carbon flow rate operating limit. If different average activated carbon flow rate values are measured during the Hg and dioxin/furan tests, the highest of the average values becomes the site-specific operating limit.

If the owner or operator intends to comply with the dioxin/furan emission limit without an ACI system, we are proposing that the owner or operator measure the operating temperature of the process (tunnel or roller kiln, ceramic tile spray dryer, floor tile press dryer) during the dioxin/furan performance test and determine the 3-hour block average operating temperature. The average of the three test runs establishes the site-specific operating limit.

For sources with no APCD installed, we are proposing that the owner or operator calculate the maximum potential HCl-equivalent using proposed Equation 6 in 40 CFR 63.8595(g)(1)(i). The owner or operator would use the results from the performance test to determine the emissions at the maximum possible process rate. For example, if the design capacity of the tunnel or roller kiln is 10 tph and the production rate during the performance test was 9 tph, then the test results represent 90 percent of the maximum potential emissions. If there are multiple kilns at a facility, the owner or operator would need to sum the maximum potential HCl-equivalent for each kiln to get the total facility maximum potential HCl-equivalent and compare this value to the proposed health-based emission limitation for acid gases. If the total facility maximum potential HCl-equivalent is greater than the proposed limitation, we are proposing that the owner or operator determine the maximum

process rate for which the total facility maximum potential HCl-equivalent remains at or below the proposed limitation. If there are multiple kilns, the owner or operator would need to determine one or more combinations of maximum process rates that would result in a total facility maximum potential HCl-equivalent that remains at or below the proposed limitation. The maximum process rate(s) would become the operating limit(s) for process rate. We are also proposing that the owner or operator measure the operating temperature of a source during the dioxin/furan performance test and determine the 3-hour block average operating temperature. The average of the three test runs establishes the site-specific operating limit for temperature.

G. What are the continuous compliance requirements?

Today's Clay Ceramics manufacturing rule proposes that the owner or operator demonstrate continuous compliance with each emission limitation that applies. The owner or operator would have to follow the requirements in the OM&M plan and document conformance with the OM&M plan. The owner or operator would need to operate a CPMS to monitor the operating parameters established during the initial performance test as described in the following paragraphs. The CPMS would have to collect data at least every 15 minutes, including at least three of four equally spaced data values (or at least 75 percent if there are more

than four data values per hour) per hour to have a valid hour of data. The owner or operator would have to operate the CPMS at all times when the process is operating. The owner or operator would also have to conduct proper maintenance of the CPMS, including inspections, calibrations and validation checks, and maintain an inventory of necessary parts for routine repairs of the CPMS. Using the recorded readings, the owner or operator would need to calculate and record the 3-hour block average values of each operating parameter. To calculate the average for each 3-hour averaging period, the owner or operator would need to have at least 75 percent of the recorded readings for that period.

For a DIFF or DLS/FF, we are proposing that the owner or operator demonstrate compliance with the acid gas (HF/HCl) health-based emission limit by maintaining free-flowing lime in the feed hopper or silo and to the APCD at all times. If lime is found not to be free flowing via the output of a load cell, carrier gas/lime flow indicator, carrier gas pressure drop measurement system or other system, the owner or operator would have to promptly initiate and complete corrective actions according to the OM&M plan. The owner or operator would also have to maintain the feeder setting (on a per ton of fired product basis) at or above the level established during the performance test and record the feeder setting once each shift.

For a DIFF or DLS/FF, the proposed rule would provide the option to use either a BLD system or VE monitoring to demonstrate compliance with the PM emission limit.

For the option of a BLD system, we are proposing that the owner or operator initiate corrective action within 1 hour of a BLD system alarm and complete corrective actions according to the OM&M plan. The owner or operator would also need to operate and maintain the FF such that the alarm is not engaged for more than 5 percent of the total operating time in a 6-month block reporting period. In calculating this operating time fraction, if inspection of the FF demonstrates that no corrective action is required, no alarm time is counted. If corrective action is required, each alarm must be counted as a minimum of 1 hour and if corrective action is initiated more than 1 hour after an alarm, the alarm time must be counted as the actual amount of time taken to initiate corrective action.

For the option of monitoring VE, we are proposing that the owner or operator perform daily, 15-minute VE observations in accordance with the procedures of EPA Method 22, "Visual Determination of Fugitive Emissions from Material Sources and Smoke Emissions from Flares," 40 CFR part 60, appendix A-7. During the VE observations, the source would need to be operating under normal conditions. If VE are observed, the owner or operator would have to promptly initiate and complete

corrective actions according to the OM&M plan. If no VE are observed in 30 consecutive daily EPA Method 22 tests, the owner or operator may decrease the frequency of EPA Method 22 testing from daily to weekly for that source. If VE are observed during any weekly test, the owner or operator would have to promptly initiate and complete corrective actions according to the OM&M plan and the owner or operator would need to resume EPA Method 22 testing of that source on a daily basis until no VE are observed in 30 consecutive daily tests, at which time the owner or operator may again decrease the frequency of EPA Method 22 testing to a weekly basis.

For a stand-alone FF, we are proposing that the owner or operator use a BLD system or monitor VE as described above to demonstrate compliance with the applicable emission limit.

For a wet scrubber, we are proposing that the owner or operator continuously maintain the 3-hour block averages for scrubber pressure drop, scrubber liquid pH, scrubber liquid flow rate and chemical addition rate (if applicable) at or above the minimum values established during the applicable performance test. Maintaining the 3-hour block average for scrubber pressure drop at or above the minimum value established during the PM performance test would demonstrate compliance with the PM emission limit. Maintaining the 3-hour block average for scrubber liquid pH and chemical (e.g., lime, caustic) addition

rate at or above the minimum values established during the HF/HCl performance test would demonstrate compliance with the acid gas (HF/HCl) health-based emission limit. Maintaining the 3-hour block average for scrubber liquid flow rate at or above the lowest minimum value established during the PM and HF/HCl performance tests would demonstrate compliance with all applicable emission limits by showing that the scrubber is in proper working order.

For an ACI system, we are proposing that the owner or operator demonstrate compliance with the Hg and dioxin/furan emission limits by continuously monitoring the activated carbon flow rate and maintaining it at or above the lowest minimum value established during the Hg and dioxin/furan performance tests.

If the owner or operator intends to comply with the dioxin/furan emission limit without an ACI system, we are proposing that the owner or operator demonstrate compliance by continuously monitoring the operating temperature of the process (tunnel or roller kiln, ceramic tile spray dryer, floor tile press dryer) and maintaining it at or above the average operating temperature during the dioxin/furan performance test for the tunnel or roller kiln and ceramic tile spray dryer and at or below the average operating temperature during the dioxin/furan performance test for the floor tile press dryer.

For a water curtain on a spray glazing operation, we are proposing that the owner or operator demonstrate compliance with the PM emission limit by conducting a daily inspection to verify the presence of water flow to the wet control system, conducting weekly visual inspections of the system ductwork and control equipment for leaks and conducting annual inspections of the interior of the control equipment (if applicable) to determine the structural integrity and condition of the control equipment.

For baffles on a spray glazing operation, we are proposing that the owner or operator demonstrate compliance with the PM emission limit by conducting an annual visual inspection of the baffles to confirm the baffles are in place.

For a source with no APCD, we are proposing that, to demonstrate compliance with the PM emission limit, the owner or operator monitor VE as described above; and, to demonstrate compliance with the dioxin/furan emission limit, the owner or operator continuously monitor the operating temperature, determine and record 3-hour block averages and maintain the 3-hour block averages at or above the average operating temperature during the dioxin/furan performance test for the tunnel or roller kiln and ceramic tile spray dryer and at or below the average operating temperature during the dioxin/furan performance test for the floor tile press dryer. In addition, if the last calculated total facility maximum potential HCl-

equivalent was not at or below the proposed health-based emission limitation for acid gases, then we are proposing that the owner or operator collect and record data documenting the process rate of the tunnel or roller kiln and reduce the data to 3-hour block averages. The owner or operator would need to maintain the kiln process rate(s) at or below the kiln process rate operating limit(s) that would enable the total facility maximum potential HCl-equivalent to remain at or below the proposed limitation.

H. What are the notification, recordkeeping and reporting requirements?

All new and existing sources would be required to comply with certain requirements of the General Provisions (40 CFR part 63, subpart A), which are identified in Table 9 of subpart KKKKK. The General Provisions include specific requirements for notifications, recordkeeping and reporting.

Each owner or operator would be required to submit a notification of compliance status report, as required by 40 CFR 63.9(h) of the General Provisions. This proposed Clay Ceramics manufacturing rule would require the owner or operator to include in the notification of compliance status report certifications of compliance with rule requirements. Semiannual compliance reports, as required by 40 CFR 63.10(e)(3) of subpart A, would also be required for each semiannual reporting period.

This proposed Clay Ceramics manufacturing rule would require records to demonstrate compliance with each emission limit and work practice standard. These recordkeeping requirements are specified directly in the General Provisions to 40 CFR part 63 and are identified in Table 9 of subpart KKKKK.

Specifically, we are proposing that the owner or operator must keep the following records:

- All reports and notifications submitted to comply with this proposed Clay Ceramics manufacturing rule.
- Records of performance tests.
- Records relating to APCD maintenance and documentation of approved routine control device maintenance exemption.
- Continuous monitoring data as required in this proposed Clay Ceramics manufacturing rule.
- Records of BLD system alarms and corrective actions taken.
- Each instance in which the owner or operator did not meet each emission limit (i.e., deviations from operating limits).
- Records of production rates.
- Records of approved alternative monitoring or testing procedures.
- Records of maintenance and inspections performed on the APCD.
- Current copies of the OM&M plan and records documenting conformance.
- Logs of the information required to document compliance with the shuttle kiln work practice standard.
- Logs of the information required to document compliance with the startup and shutdown work practice standards.
- Records of each malfunction and the corrective action taken.

We are also proposing to require that the owner or operator submit the following reports and notifications:

- Notifications required by the General Provisions.

- Initial Notification no later than 120 calendar days after the affected source becomes subject to this subpart.
- Notification of Intent to conduct performance tests and/or other compliance demonstration at least 60 calendar days before the performance test and/or other compliance demonstration is scheduled.
- Notification of Compliance Status 60 calendar days following completion of a compliance demonstration that includes a performance test.
- Notification of Compliance Status 30 calendar days following completion of a compliance demonstration that does not include a performance test (i.e., compliance demonstration for the work practice standard).
- Compliance reports semi-annually, including a report of each malfunction resulting in an exceedance and the corrective action taken.
- Report of alternative fuel use within 10 working days after terminating use of the alternative fuel.
- Results of each performance test within 60 days of completing the test, submitted to the EPA by direct computer-to-computer electronic transfer via EPA-provided software for data collected using supported test methods.

I. How would I submit emissions test results to the EPA?

The ERT provisions being proposed for clay ceramics manufacturing are the same as those being proposed for BSCP manufacturing. The ERT provisions for BSCP manufacturing are discussed in section III.I of this preamble.

VI. Rationale for the Proposed Rule for Clay Ceramics

Manufacturing

A. How did the EPA determine which sources would be regulated under the proposed rule?

Based on our review of the available information on the clay ceramics manufacturing industry, we determined that there are three distinct sectors within the industry: (1) ceramic

floor tile; (2) ceramic wall tile; and (3) sanitaryware.

Specifically, we found that the ceramic floor tile, ceramic wall tile and sanitaryware sectors of the industry differ in terms of raw materials, processes and final products.

The primary raw materials used for manufacturing sanitaryware are ball clay, other clays, feldspar and silica, whereas ceramic tile is made primarily from ball clay, talc, nepheline syenite (an igneous rock comprised of nepheline, microcline and albite), fire clay and shale. However, while the raw materials are similar for ceramic floor and wall tile, the mix for ceramic wall tile includes more talc and less ball clay, resulting in a lighter-weight mix. Regarding processes, ceramic floor tile facilities use spray dryers to process the ceramic mix into a powder to allow tile pressing, followed by press dryers to press the tiles. The tile is then glazed prior to firing in a roller kiln. Ceramic wall tile facilities also use spray and press dryers, but they are designed, managed and operated to handle the lighter weight raw material mix. Ceramic wall tile is produced in a two-step firing process using roller kilns and it is glazed in between firings. On the other hand, sanitaryware facilities use tunnel kilns to fire the ceramic ware and they glaze the ware before firing, predominantly using glaze spraying.

Ceramic floor tile, ceramic wall tile and sanitaryware also have different characteristics as finished products and compete in different markets. Ceramic floor tile is defined as a vitreous product with a low water absorption rate. Floor tile is known for its multi-color, variably-textured, and slip-resistant characteristics, which are not acceptable in most wall tiles. Ceramic wall tile is defined as a non-vitreous product required to meet a water absorption rate of 7 to 20 percent, much higher than that required for floor tile. Wall tile has much more stringent appearance requirements compared to floor tile, with the market demanding that most wall tile be mono-color, with a high gloss or smooth matte finish (requiring a two-step firing process). Sanitaryware is vitreous ceramic ware of zero or low absorption after firing that is used for plumbing and bathroom fixtures and accessories (such as toilets and ceramic sinks).

In the clay ceramics manufacturing industry, the foremost sources of HAP emissions are first-fire tunnel and periodic (shuttle) kilns at sanitaryware facilities and roller kilns at ceramic tile facilities. Based on emissions testing, the HAP emitted from first-fire tunnel kilns and roller kilns include HF, HCl, Hg, other non-Hg HAP metals and dioxins/furans. Shuttle kilns are also assumed to emit these pollutants based on similarities in raw materials used in shuttle kilns and first-fire tunnel kilns. Other sources of HAP emissions at clay

ceramics manufacturing facilities are glaze lines that employ glaze spraying at ceramic tile facilities, glaze spray booths at sanitaryware facilities, spray dryers at ceramic tile facilities and press dryers at floor tile facilities. The HAP emitted from ceramic tile glaze lines include Hg and non-Hg HAP metals, the HAP emitted from sanitaryware glazing operations include non-Hg HAP metals and the HAP emitted from ceramic tile spray dryers and press dryers are dioxins/furans. Other process units at clay ceramics facilities (e.g., raw material processing and handling, wall tile press dryers and sanitaryware ware dryers) have not been found to emit measurable quantities of HAP.⁵⁴ For this reason, the proposed Clay Ceramics manufacturing rule covers those existing and new first-fire kilns, glaze spray operations, spray dryers and press dryers at major source clay ceramics manufacturing facilities that emit HAP and meet the applicability criteria.

Additional clay ceramics process units that do not meet the applicability criteria include (1) kilns that are used exclusively for refiring or setting glazes on previously fired products; (2) glaze spray operations that use wet glazes containing less than 0.1 (weight) percent metal HAP (dry basis);

⁵⁴ As part of the 2010 EPA survey, wall tile press dryers and sanitaryware ware dryers were tested for dioxins/furans, but none of the tests found detectable levels of dioxins/furans.

and (3) glazing operations using a flow (curtain) coating or waterfall method.

Re-fire kilns are used for firing products that have already been fired but have minor defects, which are subsequently repaired. Nearly all of the emissions from the firing of a clay body (i.e., fluorides, chlorides) are released during the initial vitrification step conducted in first-fire kilns, while re-fire ware has already been vitrified and emits little to no fluorides or chlorides. Kilns that are used exclusively for setting glazes on previously fired products also emit little to no HF or HCl for similar reasons. Glaze spray operations using glaze containing less than 0.1 (weight) percent metal HAP are expected to be an insignificant source of HAP emissions. Glaze applied using a flow (curtain) coating or waterfall method rather than using an aerosol spraying method would have little to no air emissions of non-Hg HAP metals.

B. How did the EPA select the format for the proposed rule?

For Hg and PM (as a surrogate for non-Hg HAP metals) emissions from ceramic tile roller kilns and first-fire sanitaryware tunnel kilns, this proposed Clay Ceramics manufacturing rule includes numerical emission rate limits as a mass of pollutant emitted per ton of product produced. For non-Hg HAP metals emissions from ceramic tile glaze lines and sanitaryware glaze spray booths, this proposed Clay Ceramics

manufacturing rule includes numerical emission rate limits for PM as a mass of pollutant emitted per ton of glaze sprayed. For Hg emissions from ceramic tile glaze lines, this proposed rule includes numerical emission rate limits as a mass of pollutant emitted per ton of glaze sprayed. For dioxin/furan emissions from ceramic tile roller kilns, floor tile press dryers, ceramic tile spray dryers and first-fire sanitaryware tunnel kilns, this proposed rule includes numerical emission limits in units of concentration. The selection of numerical emission rate limits and numerical emission limits as the format for this proposed Clay Ceramics manufacturing rule provides flexibility for the regulated community by allowing a regulated source to choose any control technology or technique to meet the emission limits, rather than requiring each unit to use a prescribed control method that may not be appropriate in each case. In addition, the selection of numerical emission rate limits as a mass of pollutant emitted per ton of product produced ensures that differences in the size or process rate of the affected source do not affect the level of emissions control achieved.

The PM limits are proposed as a surrogate for non-Hg HAP metals. The same control techniques that would be used to control PM will control non-Hg HAP metals. Particulate matter was also chosen instead of requiring control of specific individual HAP metals because all sources do not emit the same

type and amount of non-Hg HAP metals due to differences in raw materials and glaze formulations. However, most sources generally emit PM that includes some amount and combination of HAP metals. The use of PM as a surrogate will also eliminate the cost of performance testing to comply with numerous standards for individual non-Hg HAP metals.

For acid gases (HF and HCl), this proposed Clay Ceramics manufacturing rule includes a health-based emission limit as a mass of HCl-equivalent emitted per hour. Further discussion about the development of health-based standards for the proposed Clay Ceramics manufacturing rule is provided in section VI.J of this preamble.

This proposed Clay Ceramics manufacturing rule includes work practices for sanitaryware shuttle kilns. As described in more detail in section VI.K.1 of this preamble, technological and economic limitations make it impracticable to measure compliance with numerical emission limits for sanitaryware shuttle kilns.

C. How did the EPA consider different subcategories?

Section 112(d)(1) of the CAA allows the EPA to promulgate emission standards for either categories or subcategories of sources. Through subcategorization, the EPA may distinguish among classes, types and sizes of sources within a category.

1. Sanitaryware Kilns

Upon initial consideration of the available information on the sanitaryware sector of the clay ceramics manufacturing industry, we determined that separate subcategories for sanitaryware periodic (shuttle) kilns and sanitaryware continuous (tunnel) kilns were warranted because shuttle kilns are smaller than tunnel kilns (with lower production on an hourly basis and accounting for only a small percentage of production) and are operated in batch cycles, whereas tunnel kilns operate continuously.

As noted in section VI.K.1 of this preamble, we have determined that it is technologically and economically infeasible to test shuttle kilns, thereby ruling out a quantitative analysis of how these differences impact emissions. However, a qualitative comparison can be made, in that smaller kilns operated periodically (i.e., shuttle kilns) would be expected to have lower emissions over time compared to the larger, continuously operated tunnel kilns.

2. Sanitaryware Glazing

We also determined that separate subcategories for three different glaze application methods for sanitaryware were warranted. Manual glaze spraying is done by a human operator with one spray gun per station per booth. The ware are moved and set up manually and glaze is applied to one to two pieces at a

time. The emissions per ton of glaze sprayed for this type of glaze spraying are the highest of the application methods. Spray machine, or chain-on-edge, glaze application is done by automatic reciprocating spray guns from a fixed location with 10 to 20 spray guns per booth. The ware are moved and set up on a "chain-on-edge" conveyor system and glaze is applied to six to seven pieces at a time. The emissions per ton of glaze sprayed for this type of glaze spraying are the second highest of the application methods. Robot glaze spraying is done by an automatic robot arm with one spray gun per booth. The ware are moved and set up manually and glaze is applied to one piece at a time. The emissions per ton of glaze sprayed for this type of glaze spraying are the lowest of the application methods.

We also examined subcategorization by manual spraying and non-manual spraying (where "non-manual spraying" would include both spray machine and robot glaze spraying), but we determined that the design and emission differences between spray machine and robot glaze spraying are significant enough to warrant separate subcategories.

D. What approaches did the EPA consider in developing the proposed emission limitations for existing and new sources?

As noted in section IV.D of this preamble, all standards for new and existing sources established pursuant to CAA section 112(d)(2) must reflect MACT. The remainder of this section

describes the development of the pool of data used to calculate the MACT floors for Hg, PM (as a surrogate for non-Hg HAP metals) and dioxins/furans. As noted in section VI.J of this preamble, health-based emissions standards are being proposed for the acid gases HF and HCl under the provisions of CAA section 112(d)(4). Consequently, the EPA has not prepared a MACT floor analysis for these pollutants.

In our MACT floor analyses for Hg, PM (as a surrogate for non-Hg HAP metals) and dioxins/furans, we separated the data by industry sector, source type and subcategory as described in section VI.C of this preamble (if applicable). Within each of those categories or subcategories, we ranked the data in terms of lb/ton for PM and Hg and in terms of nanograms per dry standard cubic meter (ng/dscm) at 7 percent O₂ for dioxins/furans (as described in section VI.E of this preamble). Because there are less than 30 sources in each subcategory, we identified the top five (best performing) sources for which we had data. For subcategories with less than five sources, we considered all sources for which we had data as best performing sources. Once we identified the best performing sources, we then calculated the MACT floor in units of lb/ton or ng/dscm at 7 percent O₂ (as applicable) as described in section VI.E of this preamble.

E. How did the EPA determine the MACT floors for existing sources?

The EPA must consider available emissions information to determine the MACT floors. For Hg, PM (as a surrogate for total non-Hg HAP metals) and dioxins/furans, we calculated the MACT floor for a subcategory of sources by ranking all the available emissions data for units within the subcategory with the best performing sources ranked at the top, as described later in this section and then using the test results from the best performing sources (up to five). Therefore, as discussed in section VI.D of this preamble, the MACT floor limits for Hg, PM (as a surrogate for total non-Hg HAP metals) and dioxins/furans were calculated based on the performance of the best performing sources in each of the subcategories.

The best performing sources were determined by ranking each source's average emission value from lowest to highest. We then determined the data distribution of the dataset made up of the top five best performers using kurtosis and skewness, as described in section IV.E of this preamble. We assessed variability of the best performers by calculating a UPL using the appropriate equation based on the data distribution. The UPL takes into consideration the average performance of the unit and the variability of the test runs during the testing conditions. As described in section IV.E of this preamble, the UPL

represents the value which one can expect the mean of a specified number of future observations (e.g., 3-run average) to fall below for the specified level of confidence, based upon the results of an independent sample from the same population. It is a standard statistical methodology used to account for variability.

A more detailed explanation of all the UPL equations used, including the calculations of kurtosis, standard error of kurtosis, skewness and standard error of skewness, can be found in the technical memorandum "Maximum Achievable Control Technology (MACT) Floor Analysis for Clay Ceramics" in Docket ID No. EPA-HQ-OAR-2013-0290.

We also compared the appropriate 3xRDL value to the calculated UPL value for each pollutant and subcategory. As described in section IV.E of this preamble, we used the greater of the 3xRDL value and calculated UPL value to ensure that measurement variability is adequately addressed in the MACT floor emissions limit. This check was part of the variability analysis for all existing MACT floors that had BDL or DLL run data present in the best performing datasets (see the technical memorandum "Maximum Achievable Control Technology (MACT) Floor Analysis for Clay Ceramics" in Docket ID No. EPA-HQ-OAR-2013-0290).

As previously discussed, we accounted for variability in setting floors, not only because variability is an element of performance, but because it is reasonable to assess best performance over time. We believe this approach reasonably ensures that the emission limits selected as the MACT floors adequately represent the level of emissions actually achieved by the average of the best performing units, considering operational variability of those units. Both the analysis of the measured emissions from units representative of the best performers and the variability analysis are reasonably designed to provide a meaningful estimate of the average performance or central tendency, of the best performing five units in a given subcategory. A detailed discussion of the MACT floor methodology is presented in the technical memorandum "Maximum Achievable Control Technology (MACT) Floor Analysis for Clay Ceramics" in Docket ID No. EPA-HQ-OAR-2013-0290.

Table 10 of this preamble presents the average emission level of the best performing sources and the existing source MACT floor. Each subcategory had less than 30 sources nationwide; thus, the top five sources were used in the MACT floor. If we had data for less than five sources, we used all the data available. The existing source MACT floors are based on the UPL unless otherwise noted.

**Table 10—Summary of MACT Floor Results for Clay Ceramics
Existing Sources^a**

Subcategory	Parameter	Hg ^b (lb/ton)	PM ^{b,c} (lb/ton)	Dioxins/furans (ng/dscm at 7 percent O ₂)
Floor tile roller kilns	Avg. of best performing sources	7.8 E-05	0.054	2.9
	MACT floor	1.3 E-04	0.18	4.6
Floor tile press dryers	Avg. of best performing sources	--	--	0.078
	MACT floor	--	--	0.19 ^d
Floor tile spray dryers	Avg. of best performing sources	--	--	0.96
	MACT floor	--	--	44
Wall tile roller kilns	Avg. of best performing sources	5.0 E-05	0.071	0.065
	MACT floor	2.0 E-04	0.20	0.17
Wall tile spray dryers	Avg. of best performing sources	--	--	0.053
	MACT floor	--	--	0.12 ^d
Tile glaze lines	Avg. of best performing sources	2.0 E-05	0.67	--
	MACT floor	1.6 E-04 ^d	1.9	--
First-fire sanitaryware tunnel kilns	Avg. of best performing sources	1.6 E-04	0.12	0.81
	MACT floor	2.6 E-04	0.33	1.5
Sanitaryware manual glaze application	Avg. of best performing sources	--	14	--
	MACT floor	--	33	--
Sanitaryware spray machine glaze application	Avg. of best performing sources	--	5.9	--
	MACT floor	--	12	--
Sanitaryware robot glaze application	Avg. of best performing sources	--	4.4	--
	MACT floor	--	8.8	--

^a The existing source MACT floors are based on the UPL unless otherwise noted.

^b Units of measure for kilns are lb/ton ware produced; for glazing are lb/ton glaze sprayed.

^c PM is a surrogate for non-Hg HAP metals.

^d The MACT floor is based on 3xRDL value.

F. How did the EPA determine the MACT floors for new sources?

The approach that we used to calculate the MACT floors for new sources is described in section IV.F of this preamble. This approach reasonably ensures that the emission limit selected as the MACT floor adequately represents the average level of control actually achieved in practice by the best controlled similar source, considering ordinary operational variability. A detailed discussion of the MACT floor methodology is presented in the technical memorandum "Maximum Achievable Control Technology (MACT) Floor Analysis for Clay Ceramics" in Docket ID No. EPA-HQ-OAR-2013-0290.

Table 11 of this preamble presents, for each subcategory and pollutant, the average emission level of the best performing similar source and the new source MACT floor. The new source MACT floors are based on the UPL unless otherwise noted.

Table 11—Summary of MACT Floor Results for Clay Ceramics New Sources^a

Subcategory	Parameter	Hg ^b (lb/ton)	PM ^{b,c} (lb/ton)	Dioxins/furans (ng/dscm at 7 percent O ₂)
Floor tile roller kilns	Avg. of top performer	3.5 E-05	0.020	1.1
	MACT floor	3.9 E-05	0.027	1.5
Floor tile press dryers	Avg. of top performer	--	--	0.070
	MACT floor	--	--	0.19 ^d
Floor tile spray dryers	Avg. of top performer	--	--	0.010
	MACT floor	--	--	0.17 ^d
Wall tile roller kilns	Avg. of top performer	5.0 E-05	0.071	0.065
	MACT floor	2.0 E-04	0.20	0.17
Wall tile spray dryers	Avg. of top performer	--	--	0.053
	MACT floor	--	--	0.12 ^d

Subcategory	Parameter	Hg ^b (lb/ton)	PM ^{b,c} (lb/ton)	Dioxins/furans (ng/dscm at 7 percent O ₂)
Tile glaze lines	Avg. of top performer	7.4 E-06	0.15	--
	MACT floor	1.6 E-04 ^d	0.61	--
First-fire sanitaryware tunnel kilns	Avg. of top performer	6.4 E-05	0.092	0.23
	MACT floor	1.2 E-04	0.095	0.37
Sanitaryware manual glaze application	Avg. of top performer	--	3.3	--
	MACT floor	--	3.8	--
Sanitaryware spray machine glaze application	Avg. of top performer	--	2.0	--
	MACT floor	--	3.2	--
Sanitaryware robot glaze application	Avg. of top performer	--	1.3	--
	MACT floor	--	2.2	--

^a The new source MACT floors are based on the UPL unless otherwise noted.

^b Units of measure for kilns are lb/ton ware produced; for glazing are lb/ton glaze sprayed.

^c PM is a surrogate for non-Hg HAP metals.

^d The MACT floor is based on 3xRDL value.

G. What is our approach for applying the upper prediction limit to limited datasets?

As discussed in section IV.G of this preamble, there are specific considerations when dealing with limited datasets. For the clay ceramics source category, we have limited datasets for the following pollutants and subcategories:

- Hg, PM, and dioxins/furans for new floor tile roller kilns;
- dioxins/furans for new floor tile press dryers;
- dioxins/furans for new floor tile spray dryers;
- Hg and dioxins/furans for existing and new wall tile roller kilns;
- dioxins/furans for existing and new wall tile spray dryers;
- Hg and PM for new tile glaze lines;
- Hg, PM, and dioxins/furans for new sanitaryware tunnel kilns; and

- PM for new sanitaryware manual, spray machine, and robot glaze spray booths.

For each dataset, we performed the steps outlined in the memorandum titled "Approach for Applying the Upper Prediction Limit to Limited Datasets," which is available in Docket ID No. EPA-HQ-OAR-2013-0291; see that memorandum for more information on the analysis and the results.

H. How did the EPA consider beyond-the-floor for existing sources?

As discussed in sections II.A and VI.D of this preamble, the EPA must consider emissions limitations and requirements that are more stringent than the MACT floor (i.e., beyond-the-floor control options). When considering beyond-the-floor options, the EPA must consider not only the maximum degree of reduction in emissions of HAP, but must take into account costs, energy and non-air quality health and environmental impacts when doing so. Once the MACT floor determinations were complete for each subcategory, we considered various regulatory options more stringent than the MACT floor level of control (e.g., the performance of technologies that could result in lower emissions) for the different subcategories.

We considered requiring each subcategory of existing sources to meet the new source MACT floors developed as described in section VI.F of this preamble. We analyzed the

beyond-the-floor options for each pollutant separately for each subcategory of existing sources. Our analyses are documented in the technical memorandum "Development of Cost and Emission Reduction Impacts for the Clay Ceramics NESHAP" in Docket ID No. EPA-HQ-OAR-2013-0290 and summarized in the following paragraphs.

For Hg from existing sanitaryware tunnel kilns, based on the data available, we estimate that all existing tunnel kilns could meet the new source MACT floor emission limits described in section VI.F of this preamble without incurring additional emission control costs. Therefore, we are proposing a beyond-the-floor Hg limit for existing sanitaryware tunnel kilns equivalent to the new source MACT floor.

For several sources and pollutants, the existing source MACT floor and the new source MACT floor are the same value, usually because there is only one source with data in the subcategory or because both floors are based on the 3xRDL value. These sources/pollutants include dioxins/furans from floor tile press dryers, PM (as a surrogate for total non-Hg HAP metals), Hg and dioxins/furans from wall tile roller kilns, dioxins/furans from wall tile spray dryers and Hg from ceramic tile glaze lines. Therefore, we are not proposing beyond-the-floor limits for these sources and pollutants.

The incremental costs, emission reductions and cost effectiveness for all other beyond-the-floor options are

summarized by subcategory and by pollutant in Table 12 of this preamble. In all these cases, we have concluded that the incremental costs of additional control above the MACT floor emission limits are not reasonable relative to the level of emission reduction achieved. Therefore, we are not proposing to go beyond-the-floor for any of the subcategory/pollutant concentrations included in Table 12 of this preamble.

Table 12-Summary of Costs, Emissions Reductions and Cost Effectiveness for Selected Clay Ceramics Beyond-the-Floor Options (2011 dollars)

Subcategory	Pollutant	Cost (million)		Incremental HAP Emissions Reductions (tpy)	Cost Effectiveness (\$/ton total HAP)
		Capital	Annual		
Floor tile roller kilns	Hg	\$4.14	\$3.16	0.044	\$71,800,000
	Total non-Hg HAP metals	\$10.8	\$4.28	0.73	\$5,830,000
	Dioxins/furans	\$2.32	\$1.77	8.5 E-07	\$2,080,000,000,000
Floor tile spray dryers	Dioxins/furans	\$0.335	\$0.278	4.6 E-08	\$5,990,000,000,000
Tile glaze lines	Total non-Hg HAP metals	\$7.67	\$2.70	0.038	\$70,600,000
First-fire sanitaryware tunnel kilns	Total non-Hg HAP metals	\$3.91	\$2.01	0.020	\$102,000,000
	Dioxins/furans	\$2.98	\$1.78	3.4 E-08	\$51,700,000,000,000
Sanitaryware manual glaze application	Total non-Hg HAP metals	\$6.78	\$2.19	0.24	\$9,090,000
Sanitaryware spray machine glaze application	Total non-Hg HAP metals	\$1.89	\$0.900	0.14	\$6,420,000
Sanitaryware robot glaze application	Total non-Hg HAP metals	\$4.97	\$2.22	0.097	\$23,000,000

I. How did the EPA consider beyond-the-floor for new sources?

The MACT floor level of control for each subcategory of new sources for each pollutant was based on the emission control that is achieved in practice by the best controlled similar source within each of the subcategories. When we establish a beyond-the-floor standard, we typically identify control techniques that have the ability to achieve an emissions limit more stringent than the MACT floor. No techniques were identified that would achieve HAP reductions greater than the new source floors for any of the subcategories for each pollutant. Therefore, the EPA is not proposing a beyond-the-floor limit for any of the new sources in this proposed Clay Ceramics manufacturing rule.

J. How did the EPA determine whether to set health-based standards for existing and new sources?

In developing the proposed Clay Ceramics manufacturing rule, we considered whether it was appropriate to establish health-based emission standards under CAA section 112(d)(4) for the acid gases HF and HCl. The rationale for the development of health-based standards for the proposed Clay Ceramics manufacturing rule is the same as that presented for the proposed BSCP manufacturing rule, with a few exceptions, which are discussed in the sections below. The rationale for the

development of health-based standards for the proposed BSCP manufacturing rule is discussed in section IV.J of this preamble.

1. What factors does the EPA consider in exercising its discretion whether to set a CAA section 112(d)(4) standard?

Section IV.J of this preamble discusses the following factors that the EPA considers in making a judgment whether to set a standard based on the health threshold or the traditional MACT process:

- The availability of data to set the health-based standard;
- Co-benefits that would be achieved via the MACT standard, such as reductions in emissions of other HAP and/or criteria pollutants;
- The potential impacts on ecosystems of releases of the pollutant; and
- The potential for cumulative adverse health effects due to concurrent exposure to the same HAP or other HAP with similar biological endpoints, from either the same or other source categories, where the concentration of the threshold pollutant emitted from the given source category is below the threshold.

The evaluation of the first three factors (availability of data, co-benefits and potential ecosystem impacts) are nearly identical for both the BSCP and clay ceramics industries. However, further analysis was required concerning the last factor (potential for cumulative adverse health effects). The evaluation of all four factors for the clay ceramics industry is provided below.

a. Availability of Data to Determine Standard

Like the BSCP manufacturing rule, because of the relatively small number of facilities compared to other rules such as the Boiler MACT proposal, the EPA was able to determine facility-specific information for the Clay Ceramics manufacturing rule, including tunnel and roller kiln locations and operating characteristics and stack parameters, available for all clay ceramics facilities to assess the feasibility of health-based standards in this proposed Clay Ceramics manufacturing rule. Such information enabled us to conduct the dispersion modeling necessary to establish a health-based emission limit for acid gases.⁵⁵

Consequently, we have concluded that we have enough information to determine the health-based emission standards for the acid gases HF and HCl for the clay ceramics industry. As discussed in further detail below, these limits have been developed to ensure that exposure is below the health threshold for each facility and also ensure that acute exposures will not pose any health concerns.⁵⁶

⁵⁵ For more information, see the technical memorandum "Risk Assessment to Determine a Health-Based Emission Limitation for Acid Gases for the Clay Ceramics Manufacturing Source Category" in Docket ID No. EPA-HQ-OAR-2013-0290.

⁵⁶ See Portland Cement NESHAP Final Rule, 75 FR 54970, 54986/1 (September 9, 2010) ("[W]e currently lack information on the peak short-term emissions of HCl from cement kilns which might allow us to determine whether a chronic health-based emission standard for HCl would ensure that acute exposures will not pose health concerns.")

b. Co-benefits

The additional nationwide SO₂ reductions that would be attributable to Clay Ceramics MACT standards for acid gases are estimated to be 31 tpy in the third year following promulgation of the proposed standards. Similar to BSCP, this reduction is substantially lower than the co-benefits from MACT standards for other industries for which the EPA has decided not to set a health-based limit,⁵⁷ and it would not be expected to provide a significant public health benefit in the circumstances here.

c. Ecosystem Impacts

For the section 112(d)(4) evaluation, the EPA assessed the acid gases HCl and HF around each clay ceramics facility. For

⁵⁷ See Portland Cement NESHAP Final Rule, 75 FR 54970 (September 9, 2010) - Co-benefits was identified as the "decisive factor" in the Portland Cement NESHAP Final Rule. 75 FR 54970, 54985/3. There, EPA declined to set a health-based standard for HCl where setting a MACT standard also controlled other HAP and criteria pollutants. Specifically discussed were SO₂ and other HAP gases. See 75 FR at 54984/3 ("The additional reductions of SO₂ alone attributable to the MACT standards for HCl are estimated to be 124,000 tons per year" and discussing both direct SO₂ effects and effects of SO₂ as a precursor to PM_{2.5}) and 75 FR at 54986/1 ("[Other HAP gases (chlorine (Cl₂), hydrogen cyanide (HCN) and hydrogen fluoride (HF))] are also controlled during the process of controlling HCl emissions from cement kilns using a wet scrubber. As such, their health impacts must be taken into account when considering a health-based emission limit for HCl." See also Boiler MACT Final Rule, 76 FR at 15644/1 ("EPA considered the comments received on this issue and continues to believe that the co-benefits are significant and provide an additional basis for the Administrator to conclude that it is not appropriate to exercise her discretion under section 112(d)(4).") and Boiler MACT Proposed Rule, 75 FR 32006, 32032 (June 4, 2010) - Co-benefits from MACT standard for HCl and PM as surrogate for HAP metals included the reduction of 340,000 tons per year of SO₂ and unspecified reductions of PM, other non-HAP acid gases (hydrogen bromide) and mercury. See also MATS Proposed Rule, 76 FR 24976, 25051/1 - Co-benefits from MACT standard for HCl and PM as surrogate for HAP metals included the reduction of 2.1 million tons per year of SO₂ and unspecified reductions of PM, other non-HAP acid gases (hydrogen bromide) and mercury.

HCl, the environmental risk screen indicated that the area-weighted average modeled concentrations of HCl around each facility (i.e., the area-weighted average concentration of all offsite data points in the modeling domain) did not exceed the ecological benchmark. In addition, the ecological benchmark was not exceeded at any offsite receptor location for any facility.

For HF, the environmental risk screen indicated that the area-weighted average modeled concentrations of HF around each facility (i.e., the area-weighted average concentration of all offsite data points in the modeling domain) did not exceed the ecological benchmarks. There were multiple facilities with modeled concentrations of HF at offsite receptor locations that exceeded the ecological benchmark, but the area over which the value was exceeded was no greater than one percent of the offsite modeling domain for each facility, indicating that there would not be any significant or widespread environmental effects.

d. Cumulative Effects

As noted previously, the EPA may consider the availability of information on emissions from co-located and nearby sources and consider if it is feasible to determine the potential cumulative health effects from emissions from the sources in the category when combined with other emissions from other sources that are co-located or located nearby. Relevant emissions may

include both emissions of the same pollutant and emissions of other pollutants that may cause cumulative effects.

Through industry responses to the clay ceramics 2008 EPA survey and the 2010 EPA survey, we have substantial information on the locations of clay ceramics plants and the levels of HF and HCl emitted from those plants. While the major source ceramic tile plants are not co-located with any other type of operation, the three major source sanitaryware plants are. However, the sources co-located with the sanitaryware plants do not emit acid gases. The metal foundry plant co-located with the sanitaryware plant in Kohler, Wisconsin emits chiefly particulates and metals, while the fiberglass plants co-located with the sanitaryware plants in Spartanburg, South Carolina and Brownwood, Texas emit chiefly organic HAP (styrene). Consequently, any acid gas emissions from co-located sources are not expected to impact the total facility acid gas emissions significantly.

Like BSCP facilities, clay ceramics facilities are typically located on large tracts of land needed for all of the processes involved in clay ceramics manufacturing, including raw material receiving, storage and processing; glaze preparation; forming; drying; glazing; firing; product inspection; and packaging. This provides an additional buffer between the clay ceramics plants and the surrounding area. Because of the

relatively low plume heights, maximum risks from the clay ceramics plants are located close to the facility property line. In trying to define cumulative risks from nearby non-clay ceramics emissions, the location and emissions associated with other sources not in the clay ceramics source category are far less certain. While the 2008 EPA survey and the 2010 EPA survey data for clay ceramics facilities have been reviewed by EPA engineers and scientists, the emissions levels and locations of nearby other facilities such as those in the NEI have not undergone the same level of detailed review. Thus, a quantitative analysis of nearby emissions may contain significant of uncertainty. However, as discussed above, because of the large footprint of clay ceramic facilities and the clay ceramics risks being confined to the near plant locations, we do not expect that the combined emissions of HF or HCl from clay ceramics facilities and nearby other sources would result in substantial cumulative health and environmental effects.

2. How did the EPA set the level of the standard?

As with BSCP, the EPA is proposing to exercise its discretion to use CAA section 112(d)(4). This conclusion is consistent with the EPA's prior decisions where we found it appropriate not to exercise the discretion to invoke the authority in CAA section 112(d)(4) for acid gases, because the circumstances in this case differ from those previous

considerations. We request comment on the analysis and conclusions regarding setting health-based standards.

Following from the EPA's determination that a health-based standard is appropriate, the standard must be set as follows:

- There must be an ample margin of safety to avoid the health effects on which the threshold is based.
- There must be no observable adverse effect.
- The standard must not allow greater adverse environmental effects as the MACT standard that would otherwise be established.
- A standard must be set; there can be no exclusions from compliance based on a showing that the source's emissions do not pose a health risk.

As part of the development of the proposed standards, we have maintained an inventory of major source facilities, including the size and operating hours of each tunnel and roller kiln and the geographic location and physical attributes (e.g., stack height, diameter, exit gas flow rate) of each kiln stack. To develop a health-based emission limit, both long-term and short-term inhalation exposure concentrations and health risks from the Clay Ceramics Manufacturing source category were estimated using the HEM-3 model as described in section IV.J.3 of this preamble. Further information on the overall modeling approach is presented in the technical memorandum, "Risk Assessment to Determine a Health-Based Emission Limitation for Acid Gases for the Clay Ceramics Manufacturing Source Category" in Docket ID No. EPA-HQ-OAR-2013-0290.

In developing the risk assessment for chronic exposures, we used the estimated annual average ambient air concentrations of each acid gas emitted by each source in the source category. The air concentrations at each nearby census block centroid were used as a surrogate for the chronic inhalation exposure concentration for all the people who reside in that census block. Chronic noncancer health hazards are expressed by comparing a chronic exposure to a reference level as a ratio. Because we performed HEM-3 model runs for each acid gas individually, we did not aggregate HQ values of different acid gases. Of course, multiple acid gas pollutants are emitted at clay ceramics facilities, but a 600 tpy level of HCl-equivalent emissions (based on the HEM risks modeling) ensures that a TOSHI of 1 is not exceeded, as long as the HCl-equivalent emissions do not exceed 600 tpy. It is important to note that this emission limit is only applicable to the sources in this source category and should not be considered for sources other than those included in this analysis. Equivalent emissions for HF are determined by the ratio of the chronic RfC to that for HCl, such that the HCl-equivalent emissions for HF are 420 tpy.

Because the emissions equivalency was based on chronic dose-response values, the 600 tpy level does not necessarily ensure that acute reference levels will not be exceeded. For the HCl model runs, there were no facilities with acute screening HQ

values exceeding 1. For HF, we estimate that two of the eight facilities examined had an acute value exceed the REL with the highest being two. However, no facility exceeded an HQ (AEGL-1) value for HF. To assure that no source emits more than the 600 tpy HCl-equivalent limit in a single hour, we propose setting the emissions limit at the hourly equivalent of 600 tpy (140 lb/hr of HCl-equivalent emissions).

It is important to note that the above emissions thresholds are developed from back-calculating the emissions that would result in an HQ of 1 at the worst-case facility. Potential risks at other facilities (not the worst-case facility) are predicted to be well below 1.

Because we had site-specific data on the operation of each tunnel and roller kiln, we were able to use dispersion modeling to ensure that: (1) the health-based emission limit cited above for clay ceramics facilities provides an ample margin of safety and (2) persons exposed to emissions of the pollutant would not experience the adverse health effects on which the threshold is based. In addition, as stated previously, the levels of acid gas emissions associated with clay ceramics kilns, based on results from the EPA's environmental risk screen methodology outlined above, are not expected to have an adverse environmental impact.

Facilities would demonstrate compliance with the health-based emission limit by determining their facility-wide HCl and

HF emissions, calculating the HCl-equivalent emissions for HF using RfC values and adding the HCl emissions to the HCl-equivalent value to calculate the total HCl-equivalent emissions. An equation to perform this calculation is provided in the proposed Clay Ceramics manufacturing rule. For more information on the development of the health-based standard, see the technical memorandum "Risk Assessment to Determine a Health-Based Emissions Limitation for Acid Gases for the Clay Ceramics Manufacturing Source Category" in Docket ID No. EPA-HQ-OAR-2013-0290. For more information on the calculation of an HCl-equivalent value, see the technical memorandum "Development of Cost and Emission Reduction Impacts for the Clay Ceramics NESHAP" in Docket ID No. EPA-HQ-OAR-2013-0290.

K. How did the EPA determine whether to set work practice standards for existing and new sources?

Under CAA section 112(h), the EPA may set work practice standards in place of an emissions standard where it is not feasible to prescribe or enforce an emission standard. The EPA is proposing to conclude that an emissions standard for sanitaryware shuttle kilns is not feasible because the application of measurement methodology to these sources is not practicable due to technological and economic limitations. Therefore, the EPA is proposing a work practice standard for sanitaryware shuttle kilns in lieu of emission limits for acid

gases (HF and HCl), Hg and non-Hg HAP metals. The rationale for this work practice standard is discussed in the paragraphs below.

1. Rationale for Setting Work Practice Standard in Lieu of Emission Standards

a. Overview

Shuttle kilns at sanitaryware facilities are a type of periodic kiln used primarily to refire rejected pieces that have been machined and reglazed (although some shuttle kilns are used as first-fire units). Shuttle kilns are designed with a removable superstructure that is tilted or raised using hydraulic struts to allow entrance and egress. The main advantage of this type of kiln is that it can readily accommodate changes in firing temperature profile and cycle time to match the requirements of a wide variety of ceramic products. The primary disadvantage of this type of kiln is much higher energy costs per ton when compared to tunnel kilns and roller kilns.⁵⁸

Shuttle kilns are batch operated, meaning that a batch starts cold and ends cold. The sanitaryware industry operates shuttle kilns on batch cycle times of 18 to 38 hours, with the most common cycle times between 22 and 30 hours. As shuttle

⁵⁸ See the memorandum titled "Characterization of the Ceramic Manufacturing Industry" in the original Clay Ceramics NESHAP docket, incorporated by reference into the docket for the proposed Clay Ceramics rulemaking.

kilns operate through a heating cycle, temperatures are either in ramp-up or cool-down mode.⁵⁹

b. Emissions and Testing

Emission rates can vary over the batch cycle due to the temperature cycle of the kiln. In order to accurately determine the total emissions from a shuttle kiln cycle, emissions from the entire cycle period would need to be tested.⁶⁰ As with testing BSCP periodic kilns, testing sanitaryware shuttle kilns for any less time could result in estimated emissions that are either higher or lower than actual emissions, depending on when during the kiln cycle the emissions are sampled.⁶¹

Conducting a shuttle kiln test on even the shortest cycle time would require a test crew to be on site for at least 24 hours and would require the test team to have at least a dozen or more sampling train set-ups or additional manpower on site to recover samples and turn-around sampling trains for subsequent use during the test. It is estimated that the test of a single shuttle kiln firing cycle with analysis would cost \$20,000 or more (2009 dollars). As with BSCP periodic kilns, sampling a single firing cycle might not be adequate for characterizing

⁵⁹ See the email titled "Kohler's response to EPA question regarding options for if and how shuttle kilns (periodic kilns) should be addressed," in the docket for this proposed rule.

⁶⁰ Id.

⁶¹ See the memorandum entitled "Rationale for Establishing Work Practice Standards for Periodic Brick Kilns" in Docket ID No. EPA-HQ-OAR-2013-0290.

shuttle kiln emissions, due to variations during firing cycles and variations across tests. To collect three test runs of data, two additional cycles would need to be tested, bringing the cost to \$60,000 or more (2009 dollars) to test a single shuttle kiln. Furthermore, the sanitaryware facilities covered under this proposed Clay Ceramics manufacturing rule have three or more shuttle kilns each, requiring additional tests at each facility.⁶²

c. Test Methods and Costs

As noted in section VI.K.1.a of this preamble, when EPA Method 26 or 26A is used, breakthrough of HCl can occur if emissions are variable and experience large spikes, as appears to be the case for BSCP periodic kilns. Testing of sanitaryware shuttle kilns could encounter a similar problem. Another disadvantage to using Methods 26 or 26A for testing throughout shuttle kiln cycles is the need for additional manpower to operate the sampling trains around the clock and to recover samples.⁶³

An alternative to using Method 26 or 26A is to conduct the tests using FTIR according to EPA Method 320, where HCl breakthrough is not an issue. In addition, FTIR also provides

⁶² See the sanitaryware industry communication titled "Kohler's response to EPA question regarding options for if and how shuttle kilns (periodic kilns) should be addressed," in Docket ID No. EPA-HQ-OAR-2013-0290.

⁶³ See the RTI memorandum titled "Rationale for Establishing Work Practice Standards for Periodic Brick Kilns" in Docket ID No. EPA-HQ-OAR-2013-0290.

near real-time emissions data. However, the cost for FTIR testing would be similarly expensive as testing by Method 26 or 26A throughout an entire cycle. The cost for testing by FTIR is estimated to be \$49,750 (2009 dollars) for a single 50-hour kiln cycle (the average cycle time for a BSCP periodic kiln).

Assuming a 50 percent reduction in cost for an average 25-hour sanitaryware shuttle kiln cycle, the cost to test one cycle would still be substantial (nearly \$25,000 (2009 dollars)). If it were determined that the variations in emissions from cycle to cycle were significant, it might be necessary to test each kiln for two or more cycles in order to develop a representative emission rate. Testing for a second cycle would double the testing cost to almost \$50,000 and testing for a third cycle would triple the cost to almost \$75,000 (2009 dollars). In addition to these costs, additional costs would be incurred for testing the kilns for PM emissions, which would have to be tested using a manual test method (e.g., EPA Methods 5 or 17). If additional shuttle kilns needed to be tested at each facility, the costs would be even higher.⁶⁴

While no formal cost-to-sales analysis was conducted for sanitaryware shuttle kilns like the one conducted for BSCP periodic kilns (see section IV.K.1 of this preamble), a similar

⁶⁴ Id.

informal analysis was performed using the sales and production data provided in the 2008 EPA survey responses (claimed as CBI by the respondent). Based on this analysis, a similar conclusion (that testing is not economically feasible) can be reached.

Because the test costs are similar and shuttle kilns represent a small share of total sanitaryware production and revenues, the EPA has concluded that it would not be economically feasible to require testing for shuttle kilns.

d. Feasibility of Numerical Emission Limits for Shuttle Kilns

CAA section 112(h)(1) states that the Administrator may prescribe a work practice standard or other requirements, consistent with the provisions of CAA sections 112(d) or (f), in those cases where, in the judgment of the Administrator, it is not feasible to enforce an emission standard. CAA section 112(h)(2)(B) further defines the term "not feasible" in this context to apply when "the application of measurement technology to a particular class of sources is not practicable due to technological and economic limitations."

Because of the technological and economic limitations described above, we conclude that it is not practicable to establish numerical emission limits for sanitaryware shuttle kilns. Demonstrating compliance with a numerical emissions limit for shuttle kilns is technologically limited to testing procedures that are economically infeasible for the sanitaryware

industry. Consequently, we are proposing a work practice standard for sanitaryware shuttle kilns under CAA section 112(h).

2. Work Practice Standard

The work practice standard for sanitaryware shuttle kilns proposed in today's Clay Ceramics manufacturing rule includes the following specific provisions:⁶⁵

- Each facility would have to use natural gas or equivalent as the kiln fuel, except during periods of natural gas curtailment or supply interruption.
- Each facility would have to develop and use a designed firing time and temperature cycle for each product produced in the shuttle kiln, by programming the time and temperature cycle into the kiln or by tracking each step on a log sheet.
- Each facility would have to label each shuttle kiln with the maximum load (in tons) that can be fired in the kiln during a single firing cycle.
- For each firing load, each facility would have to limit the total tonnage placed in the kiln to no more than the maximum load and each facility would have to document the total tonnage placed in the kiln to show that it is not greater than the maximum load.
- Each facility would have to develop and implement maintenance procedures for each kiln that specify the frequency of inspection and maintenance of the following items:
 - Calibration of temperature measuring devices
 - Controls that regulate air-to-fuel ratios
 - Controls that regulate firing cycles
- Each facility would have to develop and maintain records required for each shuttle kiln, including logs to document the proper operation of the shuttle kilns and logs of the maintenance procedures used to demonstrate compliance with the standard.

⁶⁵ See the BSCP industry communication titled "Periodic kiln language," in the docket for the proposed Clay Ceramics rulemaking.

L. How did the EPA develop the startup and shutdown requirements?

As stated in section V.E of this preamble, we are proposing work practice standards for periods of startup and shutdown for ceramic tile roller kilns, floor tile press dryers, ceramic tile spray dryers and sanitaryware tunnel kilns. We are not proposing alternate standards for periods of startup and shutdown for ceramic tile glaze lines or sanitaryware glaze spray booths.

As noted in section V.B of this preamble, roller and tunnel kilns and dryers typically operate continuously, so startups and shutdowns are infrequent. Startup of a roller or tunnel kiln involves starting up the burners based on a set procedure to raise the temperature of the kiln to the proper operational temperature for manufacturing clay ceramics. Shutdown of a roller or tunnel kiln is the process of cooling the kiln from the proper operational temperature by stopping the burners based on a set procedure. Similarly, startup and shutdown of a dryer is the process of raising the temperature to the proper operational temperature or lowering the temperature from the proper operational temperature for manufacturing clay ceramics. When the temperature of the kiln or dryer is below the proper operational temperature, ceramic tile and sanitaryware manufacturers typically do not push ceramics into the kiln, so

the emissions are expected to be much lower during startup and shutdown than during normal operations.

While a kiln or dryer is heating to the proper operational temperature during startup or cooling from the operational temperature during shutdown, other parameters such as exhaust flow rate, moisture content, O₂ concentration and pressure are also changing. In addition, the changes in these parameters may not happen smoothly and consistently as startup or shutdown progresses, as the kiln or dryer does not heat or cool evenly. The fluctuations in all these parameters are not consistent with the relatively steady-state conditions needed for valid, accurate results over three test runs using the measurement methods proposed to be used to demonstrate compliance. Even if testing were feasible during startup and shutdown, the emission limit formats chosen for this proposed Clay Ceramics manufacturing rule are not appropriate for use during periods other than normal operation. Specifically, if there is no throughput in the kiln or dryer, emission limits that are in a mass per throughput format would be essentially meaningless.

We did not receive any detailed information through the 2010 EPA survey about the startup or shutdown of ceramic tile roller kilns, floor tile press dryers, ceramic tile spray dryers or sanitaryware tunnel kilns. However, ceramic tile roller kilns or sanitaryware tunnel kilns are fired at similar or slightly

higher temperatures to BSCP tunnel kilns and they would likely use similar APCD to comply with the standards. Therefore, we expect that the issues described in section IV.E of this preamble associated with venting low-temperature kiln exhaust through an APCD on a BSCP tunnel kiln would also apply to an APCD on a ceramic tile roller kiln, floor tile press dryer, ceramic tile spray dryer or sanitaryware tunnel kiln. We also expect that the low temperature set points would be about the same as for BSCP tunnel kilns, as those temperatures are based on the tolerance of the APCD.

Therefore, we are proposing work practice standards for periods of startup and shutdown for ceramic tile roller kilns, floor tile press dryers, ceramic tile spray dryers and sanitaryware tunnel kilns with APCD. For startup, the owner or operator would be required to vent the exhaust from the kiln or dryer through the APCD by the time the kiln or dryer exhaust temperature reaches 400 °F. In addition, no ceramics or other product may be introduced to the kiln or dryer until the kiln or dryer exhaust temperature reaches 400 °F and the exhaust is being vented through the APCD. For shutdown, the owner or operator would be required to vent the exhaust from the kiln or dryer through the APCD until the kiln or dryer exhaust temperature falls below 300 °F. In addition, no ceramics or other product may be introduced to the kiln or dryer once the

kiln or dryer exhaust temperature falls to 300 °F and the exhaust is no longer being vented through the APCD. When the kiln or dryer exhaust is being vented through the APCD, the owner or operator would be required to comply with the applicable continuous compliance requirements described in section V.G of this preamble.

For ceramic tile roller kilns, floor tile press dryers, ceramic tile spray dryers and sanitaryware tunnel kilns that can meet the proposed standards without an APCD, there are no concerns about damaging an APCD or procedures for bypassing an APCD. In addition, we did not receive any data through the 2010 EPA survey regarding startup and shutdown of uncontrolled kilns. However, as noted above, we recognize that it is not feasible to conduct emission testing during periods of startup and shutdown. Therefore, we are proposing work practice standards for periods of startup and shutdown for ceramic tile roller kilns or sanitaryware tunnel kilns without an APCD. For startup, no ceramics or other product may be introduced to the kiln or dryer until the kiln or dryer exhaust temperature reaches 400 °F. For shutdown, no ceramics or other product may be put into the kiln or dryer once the kiln or dryer exhaust temperature falls to 300 °F. When there are ceramics in the kiln or dryer, the owner or operator would be expected to demonstrate compliance with the

emissions limitations (as described in section V.G of this preamble).

We are not proposing alternate standards (either work practice standards or an alternate numeric emission limit) for periods of startup and shutdown for ceramic tile glaze lines or sanitaryware glaze spray booths. These sources would be expected to comply with the emissions limitations (as described in section V.G of this preamble) at all times when the source is operating, including periods of startup and shutdown. We did not receive any data through the 2010 EPA survey suggesting that alternate standards for periods of startup and shutdown are needed for these sources. Glazing operations are intermittent in nature during normal operations, so emissions during startup and shutdown would not be expected to be different than emissions during normal operations.

M. How did the EPA select the compliance requirements?

We are proposing testing and monitoring requirements that are adequate to assure continuous compliance with the requirements of this proposed Clay Ceramics manufacturing rule. These requirements are described in detail in sections V.F and V.G of this preamble. We selected these requirements based upon our determination of the information necessary to ensure that the emission standards are being met and the work practices are being followed and that APCD and equipment are maintained and

operated properly. Further, these proposed requirements ensure compliance with this proposed Clay Ceramics manufacturing rule without imposing a significant additional burden for facilities that must implement them.

We are proposing that initial compliance with the emission limits for HF, HCl, PM, Hg and dioxins/furans be demonstrated by an initial performance test. The proposed Clay Ceramics manufacturing rule would also require 5-year repeat performance tests to ensure, on an ongoing basis, that the APCD is operating properly and that its performance has not deteriorated.

The majority of test methods that this proposed Clay Ceramics manufacturing rule would require for the performance stack tests (e.g., EPA Methods 5, 26A and 29) have been required under many other EPA standards. Many of the emissions tests upon which the proposed emission limits are based were conducted using these test methods.

When a performance test is conducted, we are proposing that parameter operating limits be determined during the test. To ensure continuous compliance with the proposed emission limits, the proposed Clay Ceramics manufacturing rule would require continuous parameter monitoring of the kilns and APCD and maintaining these parameters within the operating limits established during the performance test. We selected these parameter monitoring requirements because they produce data that

will be useful to both the owners or operators and the EPA for ensuring continuous compliance with the emission limits and/or operating limits and because of their reasonable cost and ease of execution.

The APCD monitoring parameters included in the proposed rule were chosen for the types of APCD commonly used in the clay ceramics industry or anticipated to be used to comply with the proposed emission limits. These parameters include lime injection rate (on a per ton of fired product basis) for DIFF and DLS/FF; pressure drop, pH, liquid flow rate and chemical addition rate (if applicable) for wet scrubbers; activated carbon flow rate for ACI systems; periodic inspections for water curtains; and annual inspections for baffles. If applicable for demonstrating compliance with the HF/HCl standard, the kiln monitoring parameter included in the proposed Clay Ceramics manufacturing rule is the kiln process rate. To demonstrate compliance with the dioxin/furan standard for those affected sources without an ACI system, the monitoring parameter included in the proposed Clay Ceramics manufacturing rule is the operating temperature for the affected process (tunnel or roller kiln, ceramic tile spray dryer, floor tile press dryer), because the formation and destruction of dioxins/furans are influenced by temperature conditions. Many of these CPMS are standard features on ceramic tile roller kilns and sanitaryware tunnel

kilns and their associated APCD and have also been used in other standards for similar industries.

In addition to parameter monitoring, the proposed Clay Ceramics manufacturing rule also includes a requirement for kilns equipped with a FF (e.g., a DIFF, DLS/FF or stand-alone FF) to either install a BLD system or monitor VE. Similar to the CPMS being proposed, BLD systems have also been used in other standards in similar industries. We have also determined that periodic VE checks are a reasonable alternative to BLD systems for this proposed Clay Ceramics manufacturing rule. Periodic VE checks have also been proposed for affected sources without an add-on control to demonstrate continuous compliance.

N. How did the EPA determine compliance times for the proposed rule?

Section 112 of the CAA specifies the dates by which affected sources must comply with the emission standards. Under CAA section 112(i)(1), new or reconstructed units must be in compliance with this proposed rule immediately upon startup or the effective date of the final rule, whichever is later. (The final action is expected to be a "major rule" as defined by 5 U.S.C. 804(2), so the effective date of the final rule is expected to be 60 days after the final rule is published in the Federal Register.)

Under CAA section 112(i)(3), existing sources are allowed up to 3 years after the effective date of the rule to comply with the final rule. For this industry, we believe that 3 years for compliance is necessary to allow adequate time to design, install and test any control systems that may need to be retrofitted onto existing sources, as well as obtain permits for the use of add-on controls.

The compliance data for existing area sources that subsequently become major sources is governed by 40 CFR 63.6(c)(5). We are proposing that such sources have 3 years from the date they become major sources to come into compliance, which is equivalent to the compliance period for existing sources discussed in the previous paragraph. Further, under the current regulations in 40 CFR 63.6(b)(7), where an area source becomes a major source by the addition of equipment or operations that meet the definition of new affected source under this rule, that portion of the existing facility that is a new affected source must be in compliance upon initial startup.

O. How did the EPA determine the required records and reports for the proposed rule?

We are proposing that owner/operators would be required to comply with the applicable requirements in the NESHAP General Provisions, subpart A of 40 CFR part 63, as described in Table 9 of the proposed Clay Ceramics manufacturing rule. We evaluated

the General Provisions requirements and included those we determined to be the notification, recordkeeping and reporting necessary to ensure compliance with and effective enforcement of, this proposed Clay Ceramics manufacturing rule.

We are also proposing that the owner or operator keep records on the firing time and temperature cycle for each sanitaryware shuttle kiln, the type of product fired in each batch and the amount of product fired in the shuttle kiln, to address the operational factors that impact HAP emissions from shuttle kilns and demonstrate compliance with the work practice standard for shuttle kilns (discussed further in section VI.K.1 of this preamble).

In addition, we are proposing that the owner or operator keep records and submit a report of each malfunction and the corrective action taken as part of the next semiannual compliance report. The proposed compliance report would provide information on each type of malfunction which occurred during the reporting period and which caused or may have caused an exceedance of an emission limit.

This proposed Clay Ceramics manufacturing rule also includes a requirement for electronic reporting of performance test data, which is discussed further in section III.I of this preamble.

We request comment on ways that we could streamline the recordkeeping and reporting requirements of the proposed Clay Ceramics manufacturing rule by relying on existing business practices.

P. How does the proposed rule affect permits?

The CAA requires that sources subject to this Clay Ceramics manufacturing rule, once finalized, be operated pursuant to a permit issued under an EPA-approved State operating permit program. The operating permit programs are developed under title V of the CAA and the implementing regulations under 40 CFR parts 70 and 71. If the facility is operating in the first 3 years of an operating permit, the owner or operator will need to obtain a revised permit to incorporate the requirements of this Clay Ceramics manufacturing rule. If the facility is in the last 2 years of an operating permit, the owner or operator will need to incorporate the requirements of this Clay Ceramics manufacturing rule into the next renewal of the permit.

VII. Summary of the Environmental, Energy and Economic Impacts of the Proposed Standards

A. What are the cost and emissions reduction impacts?

Table 13 of this preamble illustrates the costs and emissions reductions for existing sources under the BSCP manufacturing and Clay Ceramics manufacturing proposed rule.

Table 13-Summary of Costs and Emissions Reductions for BSCP and Clay Ceramics Existing Sources^a (2011 dollars)

Industry	Cost (million)		Emissions reductions (tpy)							
	Capital	Annual	HF	HCl	Cl ₂	Non-Hg HAP metals ^b	Hg	PM	PM _{2.5}	SO ₂
BSCP	\$55.9	\$19.0	410	24.0	2.09	3.79	0.0590	359	172	255
Clay Ceramics	\$0.102	\$0.0458	0	0	0	0	0	0	0	0

^a Includes costs for APCD, testing and monitoring.

^b Includes antimony, arsenic, beryllium, cadmium, chromium, cobalt, lead, manganese, nickel and selenium.

^c PM_{2.5} = particulate matter with particles less than 2.5 micrometers in diameter.

The nationwide capital and annual costs of the proposed BSCP manufacturing rule are expected to total \$55.9 million and \$19.0 million, respectively (2011 dollars). The nationwide HAP emissions reductions achieved under the proposed BSCP manufacturing rule are expected to total 440 tpy. The methodology used to estimate the nationwide costs and emissions reductions of the proposed BSCP manufacturing rule is presented in the technical memoranda titled "Development of Cost and Emission Reduction Impacts for the BSCP NESHAP" and "Monitoring and Testing Requirements and Costs for the BSCP NESHAP" in Docket ID No. EPA-HQ-OAR-2013-0291.

It is anticipated that all sanitaryware emission points will meet the MACT floor emission limits in the proposed Clay Ceramics manufacturing rule, so no emission control costs or emissions reductions are expected for these sources. However, these facilities will incur monitoring and testing costs to

demonstrate compliance with the proposed Clay Ceramics manufacturing rule. These costs are documented in the technical memorandum titled "Monitoring and Testing Requirements and Costs for the Clay Ceramics NESHAP" in Docket ID No. EPA-HQ-OAR-2013-0290.

There are no major sources producing ceramic tile. The five facilities that were major sources at the time of the 2008 and 2010 EPA surveys have already taken the necessary steps to become synthetic area sources. Consequently, none of the known tile facilities will be subject to the provisions of the Clay Ceramics manufacturing rule, which means that no costs or emissions reductions are expected for tile affected sources under the proposed Clay Ceramics manufacturing rule. We request comment on whether we need to finalize the standards for ceramic tile manufacturing even though there currently are no major sources.

B. What are the secondary impacts?

Table 14 of this preamble illustrates the secondary impacts for existing sources under the BSCP and Clay Ceramics proposed rule.

Table 14—Summary of Secondary Impacts for BSCP and Clay Ceramics Existing Sources^a

Control option	Secondary air emissions (tpy)					Energy impacts (MMBtu/yr)	Solid waste impacts (tpy)
	PM	PM _{2.5}	CO	NO _x	SO ₂		
BSCP	1.93	0.646	3.60	28.0	81.7	268,000	8,630

Clay Ceramics	0	0	0	0	0	0	0
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^a PM_{2.5} = particulate matter with particles less than 2.5 micrometers in diameter; CO = carbon monoxide; NO_x = nitrogen oxides; MMBtu/yr = million British thermal units per year.

The relevant secondary impacts that were evaluated for the BSCP manufacturing and Clay Ceramics manufacturing proposed rule includes secondary air emissions, energy impacts and solid waste impacts. Indirect or secondary air emissions are impacts that result from the increased electricity usage associated with the operation of APCD to meet the proposed limits (i.e., increased secondary emissions of criteria pollutants from power plants). Energy impacts consist of the electricity needed to operate the APCD and solid waste impacts consist of the particulate captured by the APCD that is disposed of as waste (not reused or recycled).

Under the proposed BSCP manufacturing rule, the nationwide secondary emissions of the criteria pollutants PM, carbon monoxide (CO), nitrogen oxides (NO_x) and SO₂ are expected to total 115 tpy, with energy impacts of 268,000 million British thermal units per year (MMBtu/yr) and solid waste impacts of 8,630 tpy. The methodology used to estimate the nationwide secondary impacts of the proposed BSCP manufacturing rule is presented in the technical memorandum "Development of Cost and Emission Reduction Impacts for the BSCP NESHAP" in Docket ID No. EPA-HQ-OAR-2013-0291.

As noted in the previous section, it is anticipated that all sanitaryware emission points will meet the MACT floor emission limits in the proposed Clay Ceramics manufacturing rule, so there are no secondary impacts expected for these sources. There are no major sources producing ceramic tile. The five facilities that were major sources at the time of the 2008 and 2010 EPA surveys have already taken the necessary steps to become synthetic area sources. Consequently, none of the known ceramic tile facilities are expected to be subject to the provisions of the Clay Ceramics manufacturing rule, which means that no secondary impacts are expected for ceramic tile affected sources under the proposed Clay Ceramics manufacturing rule.

C. What are the economic impacts?

For the BSCP Manufacturing source category, the average national brick price under the proposed standards increases by 1.4 percent or \$3.29 per 1,000 Standard Brick Equivalent (SBE) (2011 dollars), while overall domestic production falls by 1.1 percent or 38 million bricks per year. Under the proposed standards, the EPA estimated that one to two BSCP manufacturing facilities are at significant risk of closure.

Based on the results of the small entity screening analysis for BSCP Manufacturing, the EPA concluded that it is not able to certify that the BSCP manufacturing rule will not have a significant impact on a substantial number of small entities. As

a result, the EPA initiated a SBAR Panel and undertook an Initial Regulatory Flexibility Analysis (IRFA).

For clay ceramics manufacturing, one sanitaryware company owns major sources and will incur costs. That affected company is not a small business. The compliance costs are less than 0.001 percent of sales for the affected company. Hence, the economic impact for compliance is minimal. Because no small firms face significant control costs, there is no significant impact on small entities. Thus, the proposed Clay Ceramics regulation is not expected to have significant impact on a substantial number of small entities.

For more information on the benefits analysis and market analyses, please refer to the Regulatory Impact Analysis (RIA) for the BSCP manufacturing rule, "Regulatory Impact Analysis: Proposed Brick and Structural Clay Products NESHAP," which is available in Docket ID No. EPA-HQ-OAR-2013-0291.

D. What are the social costs and benefits?

Emission controls installed to meet the requirements of the proposed BSCP manufacturing rule will generate benefits by reducing emissions of HAP as well as criteria pollutants and their precursors, NO_x and SO₂. SO₂ and NO_x are precursors to PM_{2.5} (particulate matter with particles less than 2.5 micrometers in diameter) and Nox is a precursor to ozone. The criteria pollutant benefits are considered co-benefits for this proposed

rule. For this proposed rule, we were only able to quantify the health co-benefits associated with reduced exposure to PM_{2.5} from emission reductions of SO₂ and directly emitted PM_{2.5} because of methodological limitations associated with quantifying and monetizing HAP benefits. We estimate the monetized co-benefits of the proposed BSCP NESHAP in 2018 to be \$52 million to \$120 million (2011 dollars) at a 3-percent discount rate and \$47 million to \$110 million (2011 dollars) at a 7-percent discount rate. Using alternate relationships between PM_{2.5} and premature mortality supplied by experts, higher and lower co-benefits estimates are plausible, but most of the expert-based estimates fall between these two estimates.⁶⁶ A summary of the emission reduction and monetized co-benefits estimates for this proposed BSCP manufacturing rule at discount rates of 3 percent and 7 percent is in Table 15 of this preamble.

Table 15-Summary of the Monetized PM_{2.5} Co-Benefits for Brick and Structural Clay Products Manufacturing NESHAP for in 2018 (millions of 2011 dollars)^{a, b}

Pollutant	Emission reductions (tpy)	Total monetized co-benefits (3 percent Discount)	Total monetized co-benefits (7 percent Discount)
Directly emitted PM _{2.5}	170	45 to 100	41 to 92
PM _{2.5} precursors			
SO ₂	173	7 to 16	6 to 14

^a All estimates are for the analysis year and are rounded to two significant

⁶⁶ Roman, et al., 2008. "Expert Judgment Assessment of the Mortality Impact of Changes in Ambient Fine Particulate Matter in the U.S.," Environ. Sci. Technol., 42, 7, 2268 - 2274.

figures so numbers may not sum across rows. The total monetized co-benefits reflect the human health benefits associated with reducing exposure to PM_{2.5} through reductions of PM_{2.5} precursors, such as SO₂ and directly emitted PM_{2.5}. It is important to note that the monetized co-benefits do not include reduced health effects from exposure to HAP, direct exposure to nitrogen dioxide (NO₂), exposure to ozone, ecosystem effects or visibility impairment.

^b PM co-benefits are shown as a range from Krewski, *et al.* (2009) to Lepeule, *et al.* (2012). These models assume that all fine particles, regardless of their chemical composition, are equally potent in causing premature mortality because the scientific evidence is not yet sufficient to allow differentiation of effects estimates by particle type.

These co-benefits estimates represent the total monetized human health benefits for populations exposed to less PM_{2.5} from controls installed to reduce air pollutants in order to meet this proposed rule. Due to analytical limitations, it was not possible to conduct air quality modeling for this proposed rule. Instead, we used a "benefit-per-ton" approach to estimate the benefits of this rulemaking. To create the benefit-per-ton estimates, this approach uses a model to convert emissions of PM_{2.5} precursors into changes in ambient PM_{2.5} levels and another model to estimate the changes in human health associated with that change in air quality, which are then divided by the emissions in specific sectors. These benefit-per-ton estimates were derived using the approach published in Fann *et al.* (2012),⁶⁷ but they have since been updated to reflect the studies and population data in the 2012 PM National Ambient Air Quality

⁶⁷ Fann, N., K.R. Baker and C.M. Fulcher. 2012. "Characterizing the PM_{2.5}-related health benefits of emission reductions for 17 industrial, area and mobile emission sectors across the U.S." Environment International 49 41-151.

Standards (NAAQS) RIA.⁶⁸ Specifically, we multiplied the benefit-per-ton estimates from the "Non-EGU Point other" category by the corresponding emission reductions.⁶⁹ All national-average benefit-per-ton estimates reflect the geographic distribution of the modeled emissions, which may not exactly match the emission reductions in this rulemaking and thus, they may not reflect the local variability in population density, meteorology, exposure, baseline health incidence rates or other local factors for any specific location. More information regarding the derivation of the benefit-per-ton estimates for this category is available in the technical support document, which is available in Docket ID No. EPA-HQ-OAR-2013-0291.

These models assume that all fine particles, regardless of their chemical composition, are equally potent in causing premature mortality because the scientific evidence is not yet sufficient to allow differentiation of effects estimates by particle type. Even though we assume that all fine particles have equivalent health effects, the benefit-per-ton estimates

⁶⁸ U.S. Environmental Protection Agency (U.S. EPA). 2012. Regulatory Impact Analysis for the Final Revisions to the National Ambient Air Quality Standards for Particulate Matter. EPA-452/R-12-003. Office of Air Quality Planning and Standards, Health and Environmental Impacts Division. December. Available at <http://www.epa.gov/pm/2012/finalria.pdf>.

⁶⁹ U.S. Environmental Protection Agency. 2013. Technical support document: Estimating the benefit per ton of reducing PM_{2.5} precursors from 17 sectors. Research Triangle Park, NC. January.

vary between precursors depending on the location and magnitude of their impact on PM_{2.5} levels, which drive population exposure.

It is important to note that the magnitude of the PM_{2.5} co-benefits is largely driven by the concentration response function for premature mortality. We cite two key empirical studies, one based on the American Cancer Society cohort study⁷⁰ and the extended Six Cities cohort study.⁷¹ In the RIA for this rule, which is available in Docket ID No. EPA-HQ-OAR-2013-0291, we also include benefits estimates derived from expert judgments (Roman et al., 2008) as a characterization of uncertainty regarding the PM_{2.5}-mortality relationship.

Considering a substantial body of published scientific literature, reflecting thousands of epidemiology, toxicology and clinical studies, the EPA's Integrated Science Assessment for Particulate Matter⁷² documents the association between elevated PM_{2.5} concentrations and adverse health effects, including increased premature mortality. This assessment, which was twice reviewed by the EPA's independent Science Advisory Board,

⁷⁰ Krewski, C.A., III, R.T. Burnett, M.J. Thun, E.E. Calle, D. Krewski, K. Ito and G.D. Thurston. 2002. "Lung Cancer, Cardiopulmonary Mortality and Long-term Exposure to Fine Particulate Air Pollution." Journal of the American Medical Association 287:1132-1141.

⁷¹ Lepeule J, Laden F, Dockery D, Schwartz J 2012. "Chronic Exposure to Fine Particles and Mortality: An Extended Follow-Up of the Harvard Six Cities Study from 1974 to 2009." Environ Health Perspect. July;120(7):965-70.

⁷² U.S. Environmental Protection Agency (U.S. EPA). 2009. Integrated Science Assessment for Particulate Matter (Final Report). EPA-600-R-08-139F. National Center for Environmental Assessment - RTP Division. December. Available on the Internet at <<http://cfpub.epa.gov/ncea/cfm/recorddisplay.cfm?deid=216546>>.

concluded that the scientific literature consistently finds that a no-threshold model most adequately portrays the PM-mortality concentration-response relationship. Therefore, in this analysis, the EPA assumes that the health impact function for fine particles is without a threshold.

In general, we are more confident in the magnitude of the risks we estimate from simulated PM_{2.5} concentrations that coincide with the bulk of the observed PM concentrations in the epidemiological studies that are used to estimate the benefits. Likewise, we are less confident in the risk we estimate from simulated PM_{2.5} concentrations that fall below the bulk of the observed data in these studies. Concentration benchmark analyses (e.g., lowest measured level (LML) or one standard deviation below the mean of the air quality data in the study) allow readers to determine the portion of population exposed to annual mean PM_{2.5} levels at or above different concentrations, which provides some insight into the level of uncertainty in the estimated PM_{2.5} mortality benefits. There are uncertainties inherent in identifying any particular point at which our confidence in reported associations becomes appreciably less and the scientific evidence provides no clear dividing line. However, the EPA does not view these concentration benchmarks as a concentration threshold below which we would not quantify health benefits of air quality improvements.

For this analysis, policy-specific air quality data are not available due to time or resource limitations and thus, we are unable to estimate the percentage of premature mortality associated with this specific rule's emission reductions at each PM_{2.5} level. As a surrogate measure of mortality impacts, we provide the percentage of the population exposed at each PM_{2.5} level using the source apportionment modeling used to calculate the benefit-per-ton estimates for this sector. Using the Krewski, et al. (2009) study, 93 percent of the population is exposed to annual mean PM_{2.5} levels at or above the LML of 5.8 µg/m³. Using the Lepeule, et al. (2012) study, 67 percent of the population is exposed above the LML of 8 µg/m³. It is important to note that baseline exposure is only one parameter in the health impact function, along with baseline incidence rates population and change in air quality. Therefore, caution is warranted when interpreting the LML assessment for this rule because these results are not consistent with results from rules that had air quality modeling.

Every benefit analysis examining the potential effects of a change in environmental protection requirements is limited, to some extent, by data gaps, model capabilities (such as geographic coverage) and uncertainties in the underlying scientific and economic studies used to configure the benefit and cost models. Despite these uncertainties, we believe the

benefit analysis for this proposed rule provides a reasonable indication of the expected health benefits of the rulemaking under a set of reasonable assumptions. This analysis does not include the type of detailed uncertainty assessment found in the 2012 PM_{2.5} NAAQS RIA⁷³ because we lack the necessary air quality input and monitoring data to run the benefits model. In addition, we have not conducted air quality modeling for this proposed rule and using a benefit-per-ton approach adds another important source of uncertainty to the benefits estimates. The 2012 PM_{2.5} NAAQS benefits analysis provides an indication of the sensitivity of our results to various assumptions.

It should be noted that the monetized co-benefits estimates provided above do not include benefits from several important benefit categories, including exposure to HAP, NO_x and ozone exposure, as well as ecosystem effects and visibility impairment. Although we do not have sufficient information or modeling available to provide monetized estimates for this proposed rule, we include a qualitative assessment of these unquantified benefits in the RIA for the rule.

The specific control technologies for the proposed rule are anticipated to have minor secondary impacts, including an

⁷³ U.S. Environmental Protection Agency (U.S. EPA). 2012. Regulatory Impact Analysis for the Final Revisions to the National Ambient Air Quality Standards for Particulate Matter. EPA-452/R-12-003. Office of Air Quality Planning and Standards, Health and Environmental Impacts Division. December. Available at <http://www.epa.gov/pm/2012/finalria.pdf>.

increase of 28 tons of NO_x, less than 2 tons of PM, 3 tons of CO and 82 tons of SO₂ each year. Given the insignificant increase, only secondary effects of PM and SO₂ were included in the monetary evaluation of the actual benefits.

For more information on the benefits analysis, please refer to the RIA for this rule, "Regulatory Impact Analysis: Proposed Brick and Structural Clay Products NESHAP," which is available in Docket ID No. EPA-HQ-OAR-2013-0291.

VIII. Public Participation and Request for Comment

We request comment on all aspects of the proposed rule for BSCP Manufacturing and Clay Ceramics Manufacturing, including any alternate approaches that the EPA is considering (see section IV.Q of this preamble for further discussion on these approaches).

During this rulemaking, we conducted outreach to small entities and convened a SBAR Panel to obtain advice and recommendation of representatives of the small entities that potentially would be subject to the requirements of the proposed BSCP manufacturing rule. (Note: We did not convene a SBAR Panel for the proposed Clay Ceramics manufacturing rule because none of the major source facilities subject to the proposed Clay Ceramics manufacturing rule are owned by a small entity.) As part of the SBAR Panel process, we conducted outreach with representatives from various small entities that would be

affected by the proposed BSCP manufacturing rule. We met with these small entity representatives (SERs) to discuss the potential rulemaking approaches and potential options to decrease the impact of the BSCP manufacturing rulemaking on their industries/sectors. We distributed outreach materials to the SERs; these materials included background on the BSCP manufacturing rulemaking, possible regulatory approaches, preliminary cost and economic impacts and possible rulemaking alternatives. We met with SERs from the BSCP industry that will be impacted directly by the proposed BSCP manufacturing rule to discuss the outreach materials and receive feedback on the approaches and alternatives detailed in the outreach packet. The Panel received written comments from the SERs following the meeting in response to discussions at the meeting and the questions posed to the SERs by the agency. The SERs were specifically asked to provide comment on regulatory alternatives that could help to minimize the BSCP manufacturing rule's impact on small businesses. A copy of the final Panel report is available in Docket ID No. EPA-HQ-OAR-2013-0291.

IX. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

Under section 3(f)(1) of Executive Order 12866 (58 FR 51735, October 4, 1993), this action is an "economically significant regulatory action" because it is likely to have an annual effect on the economy of \$100 million or more." Accordingly, the EPA submitted this action to OMB for review under Executive Orders 12866 and 13563 (76 FR 3821, January 21, 2011) and any changes made in response to OMB recommendations have been documented in the dockets for this action.

In addition, the EPA prepared an analysis of the potential costs and benefits associated with this action. This analysis is contained in "Regulatory Impact Analysis: Proposed Brick and Structural Clay Products NESHAP." A copy of the analysis is available in the docket for the proposed BSCP manufacturing rule (Docket ID No. EPA-HQ-OAR-2013-0291) and the analysis is briefly summarized here.

The EPA's study estimates that affected BSCP facilities will incur total annualized costs of \$21 million (2011 dollars) under the proposed BSCP manufacturing rule, including costs of emission controls, testing and monitoring, along with recordkeeping and reporting costs for facilities that have

testing and monitoring. Total annualized costs for the alternate approach are estimated to be \$31 million (2011 dollars). The EPA gathered information on firm sales and overall industry profitability for firms owning affected BSCP facilities. The EPA estimated that one to two BSCP manufacturing facilities are at significant risk of closure under the proposed standards. Under the alternate approach, the EPA estimated that two to six BSCP manufacturing facilities are at significant risk of closure.

The EPA also conducted an assessment of the benefits of the proposed rule, as described in section VII of this preamble. These estimates reflect the monetized human health benefits of reducing cases of morbidity and premature mortality among populations exposed to PM_{2.5} reduced by this rule. Data, resource and methodological limitations prevented the EPA from monetizing the benefits from several important benefit categories, including benefits from reducing exposure to close to 450 tons of HAP each year for the proposed standards and exposure to as high as 740 tons of HAP each year through the alternate standards, as well as ecosystem effects and visibility impairment due to PM emissions. In addition to reducing emissions of PM precursors such as SO₂, this rule would reduce several non-Hg HAP metals emissions (i.e., antimony, arsenic, beryllium, cadmium, chromium, cobalt, lead, manganese, nickel and selenium) each year. The EPA estimates the total monetized

co-benefits to be \$52 million to \$120 million (2011 dollars) at a 3 percent discount rate and \$47 million to \$110 million (2011 dollars) at a 7 percent discount rate on a yearly average in 2018 for the proposed standards.

Based on the EPA's examination of costs and benefits of the proposed BSCP NESHAP, the EPA believes that the benefits of the proposed BSCP manufacturing rule will exceed the costs.

The EPA also examined the costs and economic impacts associated with the Clay Ceramics Manufacturing NESHAP. Only two firms are estimated to incur costs as a result of the proposed Clay Ceramics manufacturing rule and they only incur costs associated with testing, monitoring, recordkeeping and reporting. Total annualized costs are only \$55,900 (2011 dollars) and both firms' estimated costs of complying with the proposed Clay Ceramics manufacturing rule are less than 0.001 percent of their sales.

B. Paperwork Reduction Act

The information collection requirements in the BSCP and Clay Ceramics proposed rule have been submitted for approval to OMB under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq.

The ICR document prepared by the EPA for the BSCP Manufacturing NESHAP has been assigned the EPA ICR number 2509.01. The ICR document prepared by the EPA for the Clay Ceramics Manufacturing NESHAP has been assigned the EPA ICR

number 2510.01. The information requirements are based on notification, recordkeeping and reporting requirements in the NESHAP General Provisions (40 CFR part 63, subpart A), which are mandatory for all operators subject to national emissions standards. These recordkeeping and reporting requirements are specifically authorized by CAA section 114 (42 U.S.C. 7414). All information submitted to the EPA pursuant to the recordkeeping and reporting requirements for which a claim of confidentiality is made is safeguarded according to the EPA policies set forth in 40 CFR part 2, subpart B.

In addition to the notification, recordkeeping and reporting requirements in the NESHAP General Provisions, the proposed rule includes paperwork requirements associated with initial and 5-year repeat testing for selected process equipment, electronic reporting of performance test results, parameter monitoring, preparation of an OM&M plan, maintenance and inspection of process and control equipment, compliance with work practice standards and periods of malfunction.

There are 92 BSCP facilities that are currently major sources of HAP. An estimated 25 of these facilities are projected to become synthetic area sources by promulgation rather than comply with the BSCP standards. The remaining 67 facilities are expected to be subject to the proposed BSCP manufacturing rule. For these 67 facilities, the annual

recordkeeping and reporting burden associated with the proposed BSCP standards (averaged over the first 3 years after the effective date of the standards) is estimated to be 15,063 labor hours per year, at a cost of \$796,255/yr. No capital costs associated with monitoring, testing, recordkeeping or reporting are expected to be incurred during this period. The annual operating and maintenance costs are estimated to be \$983/yr. The total burden for the federal government (averaged over the first 3 years after the effective date of the standards) is estimated to be 103 hours per year, at a total labor cost of \$5,329 per year. (All costs are in 2011 dollars.) Burden is defined at 5 CFR 1320.3(b).

There are three clay ceramics facilities that are currently major sources of HAP and would be subject to the Clay Ceramics manufacturing rule that we are proposing. For these three facilities, the annual recordkeeping and reporting burden associated with the Clay Ceramics standards (averaged over the first 3 years after the effective date of the standards) is estimated to total 674 labor hours per year at a cost of \$35,653/yr. As with the BSCP standards, no capital costs associated with monitoring, testing, recordkeeping or reporting are expected to be incurred during this period. The annual operating and maintenance costs are estimated to be \$44/yr. The total burden for the federal government (averaged over the first

3 years after the effective date of the standards) is estimated to be 4.6 hours per year, at a total labor cost of \$239 per year. (All costs are in 2011 dollars.)

Because BSCP and clay ceramics facilities are not required to come into full compliance with the standards until 3 years after promulgation, much of the respondent burden (e.g., performance tests, inspections, notification of compliance status, compliance report, records of compliance data and malfunctions) does not occur until the fourth year following promulgation.

For the proposed BSCP manufacturing rule, we estimate an average annual recordkeeping and reporting burden of 31,805 labor hours per year, at a cost of \$1,681,231/yr, for years 4 through 6. We also estimate annualized capital costs of \$262,119/yr and annual operating and maintenance costs of \$350,075/yr over this period, for a total annualized cost of \$612,194/yr. The average annual burden for the federal government for years 4 through 6 is estimated to be 3,953 hours per year, at a total labor cost of \$207,946 per year. (All costs are in 2011 dollars.)

For the proposed Clay Ceramics manufacturing rule, we estimate an average annual recordkeeping and reporting burden of 1,448 labor hours per year, at a cost of \$76,519/yr, for years 4 through 6. We also estimate annualized capital costs of

\$27,368/yr and annual operating and maintenance costs of \$21,101/yr over this period, for a total annualized cost of \$48,469/yr. The average annual burden for the federal government for years 4 through 6 is estimated to be 180 hours per year, at a total labor cost of \$9,448 per year. (All costs are in 2011 dollars.)

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for the EPA's regulations in 40 CFR are listed in 40 CFR part 9.

To comment on the agency's need for this information, the accuracy of the provided burden estimates and any suggested methods for minimizing respondent burden, the EPA has established a public docket for each rule, which includes this ICR, under Docket ID No. EPA-HQ-OAR-2013-0291 (for the BSCP Manufacturing NESHAP) and Docket ID No. EPA-HQ-OAR-2013-0290 (for the Clay Ceramics Manufacturing NESHAP). Submit any comments related to the ICR to the EPA and OMB. See the **ADDRESSES** section at the beginning of this action for where to submit comments to the EPA. Send comments to OMB at the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW, Washington, DC 20503, Attention: Desk Office for the EPA. Since OMB is required to make a

decision concerning the ICR between 30 and 60 days after **[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, a comment to OMB is best assured of having its full effect if OMB receives it by **[INSERT DATE 30 DAYS AFTER THE DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. The final rule will respond to any OMB or public comments on the information collection requirements contained in this proposal.

C. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations and small governmental jurisdictions.

For purposes of assessing the impacts of the proposed rule on small entities, small entity is defined as: (1) a small business as defined by the Small Business Administration's (SBA's) regulations at 13 CFR 121.201; (2) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and

is not dominant in its field. Small entities affected by the proposed BSCP NESHAP are small businesses that own BSCP manufacturing facilities. Affected parent companies fall under the Clay Building Material and Refractories Manufacturing (NAICS 327120) industry and the SBA (2013) defines a small business in this industry as a firm with fewer than 750 employees. Of 44 parent companies owning BSCP facilities, there are 36 parent companies that are small businesses. Small entities affected by the proposed Clay Ceramics NESHAP are small businesses that own clay ceramics manufacturing facilities. Affected parent companies of ceramic tile facilities fall under the Clay Building Material and Refractories Manufacturing (NAICS 327120) industry and affected parent companies of sanitaryware facilities fall under the Pottery, Ceramics, and Plumbing Fixture Manufacturing (NAICS 327110) industry. However, we have determined that no small entities would be subject to the clay ceramics proposed standards.

Pursuant to section 603 of the RFA, the EPA prepared an IRFA that examines the impact of the proposed BSCP manufacturing rule on small entities along with regulatory alternatives that could reduce that impact. The IRFA is included in Section 5 of the RIA and is available for review in the docket for the proposed BSCP manufacturing rule (Docket ID No. EPA-HQ-OAR-2013-0291) and is summarized below.

1. Need for the Rule

The EPA is required under CAA section 112(d) to establish emission standards for each category or subcategory of major and area sources of HAP listed for regulation in section 112(b). These standards are applicable to new or existing sources of HAP and shall require the maximum degree of emission reduction. In the Administrator's judgment, the pollutants emitted from BSCP manufacturing facilities cause or contribute significantly to air pollution that may reasonably be anticipated to endanger public health. Consequently, NESHAP for the BSCP source category are being proposed.

2. Objectives and Legal Basis for the Rule

Section 112(d) of the CAA requires the EPA to set emissions standards for HAP emitted by major stationary sources based on the performance of the MACT. The MACT standards for existing sources must be at least as stringent as the average emissions limitation achieved by the best performing 12 percent of existing sources (for which the Administrator has emissions information) or the best performing five sources for source categories with less than 30 sources (CAA section 112(d)(3)(A) and (B)). For new sources, MACT standards must be at least as stringent as the control level achieved in practice by the best controlled similar source (CAA section 112(d)(3)). The EPA also must consider more stringent "beyond-the-floor" control options.

When considering beyond-the-floor options, the EPA must consider not only the maximum degree of reduction in emissions of HAP, but must take into account costs, energy and nonair environmental impacts when doing so. This rule is being proposed to comply with CAA section 112(d).

3. Affected Small Entities

Of 44 parent companies owning BSCP facilities, 36 parent companies are small businesses. The EPA computed the ratio of estimated compliance costs to company sales (cost-to-sales ratio) to measure the magnitude of potential impacts on small companies. Under the proposed standards, the EPA estimated that one to two small brick manufacturing facilities are at significant risk of closure. Under the alternate approach, two to five small brick manufacturing facilities are at significant risk of closure.

4. Reporting, Recordkeeping, and Other Compliance Requirements

Respondents would be required to provide one-time and periodic notifications, including initial notification, notification of performance tests, and notification of compliance status. Respondents would also be required to submit semiannual reports documenting compliance with the rule and detailing any compliance issues, and they would be required to submit the results of performance tests to the EPA's ERT. Respondents would be required to keep documentation supporting

information included in these notifications and reports, as well as records of the operation and maintenance of affected sources and APCD at the facility.

5. Related Federal Rules

The EPA determined that there are no related federal rules for this source category.

6. Significant Alternatives

The EPA has included provisions in the proposed rule where possible to minimize the burden on all affected entities, including small entities. As required by section 609(b) of the RFA, as amended by Small Business Regulatory Enforcement Fairness Act (SBREFA), the EPA also conducted outreach to small entities and convened a SBAR Panel to obtain advice and recommendations of representatives of the small entities that potentially would be subject to the proposed BSCP manufacturing rule's requirements. Seventeen SERs associated with brick manufacturing participated. On June 26, 2013, the SBAR Panel held an outreach meeting/teleconference with the SERs. In addition to the materials that the SERs received for the pre-Panel outreach, the SERs were provided with background information to help them prepare for the teleconference and prepare their comments on the proposed rulemaking.

Consistent with the RFA/SBREFA requirements, the Panel evaluated the assembled materials and small-entity comments on

issues related to elements of the IRFA. A copy of the Panel report is included in the docket for the proposed BSCP manufacturing rule (Docket ID No. EPA-HQ-OAR-2013-0291).

The SBAR made several recommendations to enhance flexibility for small businesses complying with the proposed BSCP manufacturing rule. The EPA adopted the panel recommendations to the extent feasible, as described below:

- The panel recommended that the EPA propose work practices for dioxin and take comment on the feasibility of work practice standards for Hg and other metals. The discussion of work practices for Hg and other metals should clearly identify any areas where the agency believes that the data do not support work practices to allow for meaningful comments and also discuss work practice alternatives with sufficient specificity that they can be fully considered as an alternative in the final BSCP manufacturing rule.

Proposed rule: The EPA is proposing work practices for dioxin/furan. Although the EPA is proposing emission limits for Hg and for non-Hg HAP metals, the EPA is specifically requesting comment in the proposal on whether or not work practice standards for non-Hg HAP metals and for Hg are appropriate.

- The panel recommended that the EPA co-propose both a health-based limit and MACT limits for acid gases unless

the EPA determines it lacks sufficient information to propose a numerical health-based limit.

Proposed rule: The EPA is proposing a health-based emission limit for acid gases in lieu of MACT limits.

- The panel recommended that the EPA propose separate subcategories for kilns based on size if it reduces the financial impact and that the EPA should take comment and solicit data on subcategorization based on raw materials, fuels and other factors.

Proposed rule: The EPA evaluated the data to determine if subcategories of sources were supported, including subcategories by kiln size. As a result, the EPA is proposing emission limits for Hg in two subcategories based on kiln size (large, small). However, although the EPA has the discretion to subcategorize by kiln size, the EPA determined it was not necessary to exercise this discretion for all pollutants, including total non-Hg HAP metals. Instead, the EPA is proposing a choice of emission limits for PM or total non-Hg HAP metals for all tunnel kilns. The ability to comply with the equivalent lb/hr total non-Hg HAP metals limit provides additional flexibility for small tunnel kilns and tunnel kilns with a low metals content in the PM emissions.

- The panel recommended that the EPA specifically request information, at proposal, on how the presence of sawdust dryers would affect emissions and control costs.

Proposed rule: The proposed rule requests comment on whether the EPA should create a subcategory for kilns fired with sawdust (with or without a sawdust dryer).

- The panel recommended that the EPA propose work practice standards for startup and shutdown.

Proposed rule: The EPA is proposing work practice standards for periods of startup and shutdown for tunnel kilns.

- The panel recommended that the EPA set the floor based on 12 percent of the entire source category if the EPA can establish that the data available to the agency represent the best-performing sources consistent with section 112 of the CAA and relevant case law.

Proposed rule: The test data for PM (the surrogate for total non-Hg HAP metals) showed that kilns controlled with a FF-based APCD (e.g., DIFF, DLS/FF) are the better performers and at least 12 percent of the kilns in the industry are controlled with a FF-based APCD. Therefore, the MACT limit is based on the top 12 percent of the kilns in the industry (i.e., the best-performing sources with a FF-based APCD). However, the EPA was unable to establish

that the data available to the agency represented the best-performing sources for Hg control. Therefore, the MACT limit for Hg is based upon the top 12 percent of sources for which we had test data.

We invite comments on all aspects of the proposal and its impacts on small entities.

D. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), 2 U.S.C. 1531-1538, requires Federal agencies, unless otherwise prohibited by law, to assess the effects of their regulatory actions on State, local and tribal governments and the private sector. This action does not contain a federal mandate that may result in expenditures of \$100 million or more for state, local or tribal governments, in the aggregate, or the private sector in any 1 year. This action is not expected to impact state, local or tribal governments. The nationwide annual cost to the affected industry is estimated to be \$19.0 million per year for the proposed BSCP manufacturing rule and \$54,100 per year for the proposed Clay Ceramics manufacturing rule (2011 dollars). Thus, this action is not subject to the requirements of sections 202 or 205 of the UMRA.

This action is also not subject to the requirements of section 203 of UMRA because it contains no regulatory requirements that might significantly or uniquely affect small

governments. It contains no requirements that apply to such governments, nor does it impose obligations upon them.

E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. None of the facilities subject to this action are owned or operated by state governments and nothing in this proposal will supersede state regulations. Thus, Executive Order 13132 does not apply to this action. In the spirit of Executive Order 13132 and consistent with the EPA policy to promote communications between the EPA and state and local governments, the EPA specifically solicits comment on this proposed action from state and local officials.

F. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments

This action does not have tribal implications, as specified in Executive Order 13175 (65 FR 67249, November 9, 2000). It will not have substantial direct effects on tribal governments, on the relationship between the federal government and Indian tribes or on the distribution of power and responsibilities between the federal government and Indian tribes, as specified

in Executive Order 13175. The action imposes requirements on owners and operators of BSCP and clay ceramics manufacturing facilities and not tribal governments. Although Executive Order 13175 does not apply to this action, the EPA specifically solicits additional comment on this proposed action from tribal officials.

G. Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks

The EPA interprets Executive Order 13045 (62 FR 19885, April 23, 1997) as applying to those regulatory actions that concern health or safety risks, such that the analysis required under section 5-501 of the Executive Order has the potential to influence the regulation. This action is not subject to Executive Order 13045 because it is based solely on technology performance. Nevertheless, this action will result in reductions in emissions of HF, HCl, Cl₂, dioxins/furans and Hg and other metals, which will provide some increased protection of health for people of all ages including children.

H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution or Use

This action is not a "significant energy action" as defined in Executive Order 13211 (66 FR 28355 (May 22, 2001)), because it is not likely to have a significant adverse effect on the supply, distribution or use of energy. This action will not

adversely directly affect productivity, competition or prices in the energy sector.

I. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 ("NTTAA"), Public Law No. 104-113 (15 U.S.C. 272 note), directs the EPA to use voluntary consensus standards (VCS) in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs the EPA to provide Congress, through OMB, explanations when the agency decides not to use available and applicable VCS.

This proposed rulemaking involves technical standards. The EPA proposes to use the following four VCS as acceptable alternatives to the EPA test methods for the purpose of this rule. ANSI/ASME PTC 19-10-1981, Part 10, "Flue and Exhaust Gas Analyses," is acceptable as an alternative to Method 3A and 3B for the manual procedures only and not the instrumental procedures. ASTM D6735-01 (Reapproved 2009), "Standard Test Method for Measurement of Gaseous Chlorides and Fluorides from Mineral Calcining Exhaust Sources—Impinger Method," is acceptable as an alternative to Methods 26 and 26A.

ASTM D6784-02 (Reapproved 2008), "Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro Method)," is acceptable as an alternative to Method 29 (portion for Hg only).

ASTM D6348-03 (Reapproved 2010), "Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy," is acceptable as an alternative to Method 320 with the following conditions: (1) the test plan preparation and implementation in the Annexes to ASTM D 6348-03, Sections A1 through A8 are mandatory; and (2) in ASTM D6348-03 Annex A5 (Analyte Spiking Technique), the percent (%) R must be determined for each target analyte (Equation A5.5). In order for the test data to be acceptable for a compound, %R must be greater than or equal to 70 percent and less than or equal to 130 percent. If the %R value does not meet this criterion for a target compound, the test data is not acceptable for that compound and the test must be repeated for that analyte (i.e., the sampling and/or analytical procedure should be adjusted before a retest). The %R value for each compound must be reported in the test report and all field measurements must be corrected with the calculated %R value for that compound by using the following equation:

Reported Result = (Measured Concentration in the Stack x 100)/%R.

The EPA welcomes comments on this aspect of the proposed rulemaking and, specifically, invites the public to identify potentially applicable VCS and to explain why such standards should be used in one or both of these regulations.

J. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order 12898 (59 FR 7629, February 16, 1994) establishes federal executive policy on environmental justice. Its main provision directs federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies and activities on minority populations and low-income populations in the United States.

The EPA has determined that this proposed rule will not have disproportionately high and adverse human health or environmental effects on minority, low income or indigenous populations because they increase the level of environmental protection for all affected populations without having any disproportionately high and adverse human health or

environmental effects on any population, including any minority, low income or indigenous populations. The proposed rule establishes national standards that will result in reductions in emissions of HF, HCl, Cl₂, dioxins/furans and Hg and other metals to which all affected populations are exposed. Thus the proposed rule is projected to have positive, not adverse, impacts on human health and the environment.

List of Subjects in 40 CFR Part 63

Environmental protection, Administrative practice and procedure, Air pollution control, Hazardous substances, Incorporation by reference, Intergovernmental relations, Reporting and recordkeeping requirements.

Dated: November 20, 2014.

Gina McCarthy,
Administrator.

For the reasons discussed in the preamble, the Environmental Protection Agency proposes to amend 40 CFR part 63 as follows:

**PART 63--NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR
POLLUTANTS FOR SOURCE CATEGORIES**

1. The authority citation for part 63 continues to read as follows:

Authority: 42 U.S.C. 7401 et seq.

2. Section 63.14 is amended by:

- a. Revising paragraphs (f)(1), (g)(74) and (84);
- b. Adding paragraph (g)(95); and
- c. Revising paragraph (l)(2).

The revisions and addition read as follows:

§ 63.14 Incorporations by reference.

* * * * *

(f) * * *

(1) ANSI/ASME PTC 19.10-1981, Flue and Exhaust Gas Analyses [Part 10, Instruments and Apparatus], issued August 31, 1981, IBR approved for §§ 63.309(k), 63.457(k), 63.772(e) and (h), 63.865(b), 63.1282(d) and (g), 63.3166(a), 63.3360(e), 63.3545(a), 63.3555(a), 63.4166(a), 63.4362(a), 63.4766(a), 63.4965(a), 63.5160(d), table 4 to subpart UUUU, 63.9307(c), 63.9323(a), 63.11148(e), 63.11155(e), 63.11162(f), 63.11163(g), 63.11410(j), 63.11551(a), 63.11646(a), and 63.11945, table 5 to

subpart DDDDD, table 4 to subpart JJJJJ, table 4 to subpart KKKKK, tables 4 and 5 of subpart UUUUU, and table 1 to subpart ZZZZZ.

* * * * *

(g) * * *

(74) ASTM D6348-03 (Reapproved 2010), Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy, including Annexes A1 through A8, (Approved October 1, 2010), IBR approved for table 4 to subpart JJJJJ, table 4 to subpart KKKKK, tables 1, 2, and 5 to subpart UUUUU, and appendix B to subpart UUUUU.

* * * * *

(84) ASTM D6784-02 (Reapproved 2008), Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro Method), (Approved April 1, 2008), IBR approved for §§ 63.11646(a), 63.11647(a) and (d), tables 1, 2, 5, 11, 12t, and 13 to subpart DDDDD, table 4 to subpart JJJJJ, table 4 to subpart KKKKK, table 4 to subpart JJJJJ, table 5 to subpart UUUUU, and appendix A to subpart UUUUU.

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(95) ASTM D6735-01 (Reapproved 2009), Standard Test Method for Measurement of Gaseous Chlorides and Fluorides from Mineral Calcining Exhaust Sources—Impinger Method, IBR approved for table 4 to subpart JJJJJ and table 4 to subpart KKKKK.

* * * * *

(1) * * *

(2) EPA-454/R-98-015, Office of Air Quality Planning and Standards (OAQPS), Fabric Filter Bag Leak Detection Guidance, September 1997, IBR approved for §§ 63.548(e), 63.7525(j), 63.8450(e), 63.8600(e), and 63.11224(f).

3. Subchapter C is amended by revising subpart JJJJJ to read as follows:

Subpart JJJJJ—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR BRICK AND STRUCTURAL CLAY PRODUCTS MANUFACTURING

Sec.

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WHAT THIS SUBPART COVERS

§ 63.8380 What is the purpose of this subpart?

This subpart establishes national emission limitations for hazardous air pollutants (HAP) emitted from brick and structural clay products (BSCP) manufacturing facilities. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations.

§ 63.8385 Am I subject to this subpart?

You are subject to this subpart if you own or operate a BSCP manufacturing facility that is, is located at, or is part of, a major source of HAP emissions according to the criteria in paragraphs (a) and (b) of this section.

(a) A BSCP manufacturing facility is a plant site that manufactures brick (including, but not limited to, face brick, structural brick, and brick pavers); clay pipe; roof tile; extruded floor and wall tile; and/or other extruded, dimensional clay products. Brick and structural clay products manufacturing facilities typically process raw clay and shale, form the processed materials into bricks or shapes, and dry and fire the bricks or shapes.

(b) A major source of HAP emissions is any stationary source or group of stationary sources within a contiguous area

under common control that emits or has the potential to emit any single HAP at a rate of 9.07 megagrams (10 tons) or more per year or any combination of HAP at a rate of 22.68 megagrams (25 tons) or more per year.

§ 63.8390 What parts of my plant does this subpart cover?

(a) This subpart applies to each existing, new, or reconstructed affected source at a BSCP manufacturing facility.

(b) For the purposes of this subpart, the affected sources are described in paragraphs (b)(1) and (2).

(1) All tunnel kilns at a BSCP manufacturing facility are an affected source. For the remainder of this subpart, a tunnel kiln with a design capacity equal to or greater than 9.07 megagrams per hour (Mg/hr) (10 tons per hour (tph)) of fired product will be called a large tunnel kiln, and a tunnel kiln with a design capacity less than 9.07 Mg/hr (10 tph) of fired product will be called a small tunnel kiln.

(2) Each periodic kiln is an affected source.

(c) Process units not subject to the requirements of this subpart are listed in paragraphs (c)(1) through (3) of this section.

(1) Kilns that are used exclusively for setting glazes on previously fired products are not subject to the requirements of this subpart.

(2) Raw material processing and handling.

(3) Dryers.

(d) A source is a new affected source if construction of the affected source began after **[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, and you met the applicability criteria at the time you began construction.

(e) An affected source is reconstructed if you meet the criteria as defined in § 63.2.

(f) An affected source is existing if it is not new or reconstructed.

§ 63.8395 When do I have to comply with this subpart?

(a) If you have a new or reconstructed affected source, you must comply with this subpart according to paragraphs (a)(1) and (2) of this section.

(1) If the initial startup of your affected source is after **[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]** but before **[DATE 60 DAYS AFTER THE DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER]**, then you must comply with the applicable emission limitations and work practice standards in Tables 1, 2, and 3 to this subpart no later than **[DATE 60 DAYS AFTER THE DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER]**.

(2) If the initial startup of your affected source is after **[DATE 60 DAYS AFTER THE DATE OF PUBLICATION OF THE FINAL RULE IN**

THE FEDERAL REGISTER], then you must comply with the applicable emission limitations and work practice standards in Tables 1, 2, and 3 to this subpart upon initial startup of your affected source.

(b) If you have an existing affected source, you must comply with the applicable emission limitations and work practice standards in Tables 1, 2, and 3 to this subpart no later than [DATE 3 YEARS AND 60 DAYS AFTER THE DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER].

(c) If you have an existing area source that increases its emissions or its potential to emit such that it becomes a major source of HAP by adding a new affected source or by reconstructing, you must be in compliance with this subpart upon initial startup of your affected source as a major source.

(d) If you have a new area source (i.e., an area source for which construction or reconstruction commenced after [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]) that increases its emissions or its potential to emit such that it becomes a major source of HAP, you must be in compliance with this subpart upon initial startup of your affected source as a major source.

(e) You must meet the notification requirements in § 63.8480 according to the schedule in § 63.8480 and in subpart A of this part. Some of the notifications must be submitted before

you are required to comply with the emission limitations in this subpart.

EMISSION LIMITATIONS AND WORK PRACTICE STANDARDS

§ 63.8405 What emission limitations and work practice standards must I meet?

(a) You must meet each emission limit in Table 1 to this subpart that applies to you.

(b) You must meet each operating limit in Table 2 to this subpart that applies to you.

(c) You must meet each work practice standard in Table 3 to this subpart that applies to you.

§ 63.8410 What are my options for meeting the emission limitations and work practice standards?

(a) To meet the emission limitations in Tables 1 and 2 to this subpart, you must use one or more of the options listed in paragraphs (a)(1) and (2) of this section.

(1) Emissions control system. Use an emissions capture and collection system and an air pollution control device (APCD) and demonstrate that the resulting emissions meet the emission limits in Table 1 to this subpart, and that the capture and collection system and APCD meet the applicable operating limits in Table 2 to this subpart.

(2) Process changes. Use low-HAP raw materials or implement manufacturing process changes and demonstrate that the resulting emissions or emissions reductions meet the emission limits in Table 1 to this subpart.

(b) To meet the work practice standards for affected periodic kilns, you must comply with the requirements listed in Table 3 to this subpart.

(c) To meet the work practice standards for dioxins/furans for affected tunnel kilns, you must comply with the requirements listed in Table 3 to this subpart.

(d) To meet the work practice standards for affected tunnel kilns during periods of startup and shutdown, you must comply with the requirements listed in Table 3 to this subpart.

GENERAL COMPLIANCE REQUIREMENTS

§ 63.8420 What are my general requirements for complying with this subpart?

(a) You must be in compliance with the emission limitations (including operating limits) in this subpart at all times, except during periods of routine control device maintenance as specified in paragraph (d) of this section.

(b) Except as specified in paragraph (d) of this section, you must operate and maintain any affected source, including associated air pollution control equipment and monitoring

equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by the applicable standard have been achieved. Determination of whether a source is operating in compliance with operation and maintenance requirements will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. During the period between the compliance date specified for your affected source in § 63.8395 and the date upon which continuous monitoring systems (CMS) (e.g., continuous parameter monitoring systems) have been installed and verified and any applicable operating limits have been set, you must maintain a log detailing the operation and maintenance of the process and emissions control equipment.

(c) For each affected kiln that is subject to the emission limits specified in Table 1 to this subpart, you must prepare and implement a written operation, maintenance, and monitoring (OM&M) plan according to the requirements in § 63.8425.

(d) If you own or operate an affected kiln that is subject to the emission limits specified in Table 1 to this subpart and

must perform routine maintenance on the control device for that kiln, you may bypass the kiln control device and continue operating the kiln upon approval by the Administrator provided you satisfy the conditions listed in paragraphs (d)(1) through (5) of this section.

(1) You must request a routine control device maintenance exemption from the Administrator. Your request must justify the need for the routine maintenance on the control device and the time required to accomplish the maintenance activities, describe the maintenance activities and the frequency of the maintenance activities, explain why the maintenance cannot be accomplished during kiln shutdowns, describe how you plan to minimize emissions to the greatest extent possible during the maintenance, and provide any other documentation required by the Administrator.

(2) The routine control device maintenance exemption must not exceed 4 percent of the annual operating uptime for each kiln.

(3) The request for the routine control device maintenance exemption, if approved by the Administrator, must be incorporated by reference in and attached to the affected source's title V permit.

(4) You must minimize HAP emissions during the period when the kiln is operating and the control device is offline.

(5) You must minimize the time period during which the kiln is operating and the control device is offline.

(e) You must be in compliance with the work practice standards in this subpart at all times.

(f) You must be in compliance with the provisions of subpart A of this part, except as noted in Table 8 to this subpart.

§ 63.8425 What do I need to know about operation, maintenance, and monitoring plans?

(a) For each affected kiln that is subject to the emission limits specified in Table 1 to this subpart, you must prepare, implement, and revise as necessary an OM&M plan that includes the information in paragraph (b) of this section. Your OM&M plan must be available for inspection by the permitting authority upon request.

(b) Your OM&M plan must include, as a minimum, the information in paragraphs (b)(1) through (13) of this section.

(1) Each process and APCD to be monitored, the type of monitoring device that will be used, and the operating parameters that will be monitored.

(2) A monitoring schedule that specifies the frequency that the parameter values will be determined and recorded.

(3) The limits for each parameter that represent continuous compliance with the emission limitations in § 63.8405. The limits must be based on values of the monitored parameters recorded during performance tests.

(4) Procedures for the proper operation and routine and long-term maintenance of each APCD, including a maintenance and inspection schedule that is consistent with the manufacturer's recommendations.

(5) Procedures for installing the CMS sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (e.g., on or downstream of the last APCD).

(6) Performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer, and the data collection and reduction system.

(7) Continuous monitoring system performance evaluation procedures and acceptance criteria (e.g., calibrations).

(8) Procedures for the proper operation and maintenance of monitoring equipment consistent with the requirements in §§ 63.8450 and 63.8(c)(1), (3), (7), and (8).

(9) Continuous monitoring system data quality assurance procedures consistent with the requirements in § 63.8(d).

(10) Continuous monitoring system recordkeeping and reporting procedures consistent with the requirements in §§ 63.8485 and 63.8490.

(11) Procedures for responding to operating parameter deviations, including the procedures in paragraphs (b)(11)(i) through (iii) of this section.

(i) Procedures for determining the cause of the operating parameter deviation.

(ii) Actions necessary for correcting the deviation and returning the operating parameters to the allowable limits.

(iii) Procedures for recording the times that the deviation began and ended and corrective actions were initiated and completed.

(12) Procedures for keeping records to document compliance.

(13) If you operate an affected kiln and you plan to take the kiln control device out of service for routine maintenance, as specified in § 63.8420(d), the procedures specified in paragraphs (b)(13)(i) and (ii) of this section.

(i) Procedures for minimizing HAP emissions from the kiln during periods of routine maintenance of the kiln control device when the kiln is operating and the control device is offline.

(ii) Procedures for minimizing the duration of any period of routine maintenance on the kiln control device when the kiln is operating and the control device is offline.

(c) Changes to the operating limits in your OM&M plan require a new performance test. If you are revising an operating limit parameter value, you must meet the requirements in paragraphs (c)(1) and (2) of this section.

(1) Submit a notification of performance test to the Administrator as specified in § 63.7(b).

(2) After completing the performance tests to demonstrate that compliance with the emission limits can be achieved at the revised operating limit parameter value, you must submit the performance test results and the revised operating limits as part of the Notification of Compliance Status required under § 63.9(h).

(d) If you are revising the inspection and maintenance procedures in your OM&M plan, you do not need to conduct a new performance test.

TESTING AND INITIAL COMPLIANCE REQUIREMENTS

§ 63.8435 By what date must I conduct performance tests?

For each affected kiln that is subject to the emission limits specified in Table 1 to this subpart, you must conduct performance tests within 180 calendar days after the compliance

date that is specified for your source in § 63.8395 and according to the provisions in § 63.7(a)(2).

§ 63.8440 When must I conduct subsequent performance tests?

(a) For each affected kiln that is subject to the emission limits specified in Table 1 to this subpart, you must conduct a performance test before renewing your 40 CFR part 70 operating permit or at least every 5 years following the initial performance test.

(b) You must conduct a performance test when you want to change the parameter value for any operating limit specified in your OM&M plan.

§ 63.8445 How do I conduct performance tests and establish operating limits?

(a) You must conduct each performance test in Table 4 to this subpart that applies to you.

(b) Before conducting the performance test, you must install and calibrate all monitoring equipment.

(c) Each performance test must be conducted according to the requirements in § 63.7 and under the specific conditions in Table 4 to this subpart.

(d) Performance tests shall be conducted under such conditions as the Administrator specifies to the owner or operator based on representative performance of the affected

source for the period being tested. Representative conditions exclude periods of startup and shutdown. The owner or operator may not conduct performance tests during periods of malfunction. The owner or operator must record the process information that is necessary to document operating conditions during the test and include in such record an explanation to support that such conditions represent normal operation. Upon request, the owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of performance tests.

(e) You must conduct at least three separate test runs for each performance test required in this section, as specified in § 63.7(e)(3). Each test run must last at least 1 hour.

(f) You must use the data gathered during the performance test and the equations in paragraphs (f)(1) and (2) of this section to determine compliance with the emission limitations.

(1) To determine compliance with the production-based particulate matter (PM) and mercury (Hg) emission limits in Table 1 to this subpart, you must calculate your mass emissions per unit of production for each test run using Equation 1 of this section:

$$MP = \frac{ER}{P} \quad (\text{Eq. 1})$$

Where:

- MP = mass per unit of production, kilograms (pounds) of pollutant per megagram (ton) of fired product
- ER = mass emission rate of pollutant (PM or Hg) during each performance test run, kilograms (pounds) per hour
- P = production rate during each performance test run, megagrams (tons) of fired product per hour.

(2) To determine compliance with the health-based standard for acid gas HAP for BSCP manufacturing facilities in Table 1 to this subpart, you must:

(i) Calculate the HCl-equivalent emissions for HF, HCl, and Cl₂ for each tunnel kiln at your facility using Equation 2 of this section:

$$E_i = E_{HCl} + \left[E_{HF} \left(\frac{RfC_{HCl}}{RfC_{HF}} \right) \right] + \left[E_{Cl_2} \left(\frac{RfC_{HCl}}{RfC_{Cl_2}} \right) \right] \quad (\text{Eq. 2})$$

Where:

- E_i = HCl-equivalent emissions for kiln i, kilograms (pounds) per hour
- E_{HCl} = emissions of HCl, kilograms (pounds) per hour
- E_{HF} = emissions of HF, kilograms (pounds) per hour
- E_{Cl₂} = emissions of Cl₂, kilograms (pounds) per hour
- RfC_{HCl} = reference concentration for HCl, 20 micrograms per cubic meter
- RfC_{HF} = reference concentration for HF, 14 micrograms per cubic meter
- RfC_{Cl₂} = reference concentration for chlorine, 0.15 micrograms per cubic meter

(ii) If you have multiple tunnel kilns at your facility, sum the HCl-equivalent values for all tunnel kilns at the facility using Equation 3 of this section:

$$E_{total} = \sum_{i=1}^n E_i \quad (\text{Eq. 3})$$

Where:

E_{total} = HCl-equivalent emissions for total of all kilns at facility, kilograms (pounds) per hour

E_i = HCl-equivalent emissions for kiln i, kilograms (pounds) per hour

n = number of tunnel kilns at facility

(iii) Compare this value to the health-based standard in Table 1 to this subpart.

(g) You must establish each site-specific operating limit in Table 2 to this subpart that applies to you as specified in paragraph (g)(1) of this section and in Table 4 to this subpart.

(1)(i) If you do not have an APCD installed on your kiln, calculate the maximum potential HCl-equivalent emissions for HF, HCl, and Cl_2 for each tunnel kiln at your facility using Equation 4 of this section:

$$E_{\max i} = (Cap_i) \left[(MP_{iHCl}) + (MP_{iHF}) \left(\frac{RfC_{HCl}}{RfC_{HF}} \right) + (MP_{iCl_2}) \left(\frac{RfC_{HCl}}{RfC_{Cl_2}} \right) \right] \quad (\text{Eq. 4})$$

Where:

$E_{\max i}$ = maximum potential HCl-equivalent emissions for kiln i, kilograms (pounds) per hour

Cap_i = design capacity for kiln i, megagrams (tons) of fired product per hour

MP_{iHCl} = mass of HCl per unit of production for kiln i, kilograms (pounds) of HCl per megagram (ton) of fired product

MP_{iHF} = mass of HF per unit of production for kiln i, kilograms (pounds) of HF per megagram (ton) of fired product

MP_{iCl_2} = mass of Cl_2 per unit of production for kiln i, kilograms (pounds) of Cl_2 per megagram (ton) of fired product

RfC_{HCl} = reference concentration for HCl, 20 micrograms per cubic meter

RfC_{HF} = reference concentration for HF, 14 micrograms per cubic meter

RfC_{Cl_2} = reference concentration for Cl_2 , 0.15 micrograms per cubic meter

(ii) If you have multiple tunnel kilns at your facility, sum the maximum potential HCl-equivalent values for all tunnel kilns at the facility using Equation 5 of this section:

$$E_{\max total} = \sum_{i=1}^n E_{\max i} \quad (\text{Eq. 5})$$

Where:

$E_{\max total}$ = maximum potential HCl-equivalent emissions for total of all kilns at facility, kilograms (pounds) per hour

$E_{\max i}$ = maximum potential HCl-equivalent emissions for kiln i, kilograms (pounds) per hour

n = number of tunnel kilns at facility

(iii) If you have a single tunnel kiln at your facility and the total facility maximum potential HCl-equivalent emissions

($E_{\text{max total}}$) are greater than the HCl-equivalent limit in Table 1 to this subpart, determine the maximum process rate for the tunnel kiln using Equation 6 of this section that would ensure the total facility maximum potential HCl-equivalent emissions remain at or below the HCl-equivalent limit. The maximum process rate would become your operating limit for process rate and must be included in your OM&M plan.

$$P_{\text{max } i} = \frac{\text{HCl} - \text{eq}}{\left[(MP_{i\text{HCl}}) + (MP_{i\text{HF}}) \left(\frac{RfC_{\text{HCl}}}{RfC_{\text{HF}}} \right) + (MP_{i\text{Cl}_2}) \left(\frac{RfC_{\text{HCl}}}{RfC_{\text{Cl}_2}} \right) \right]} \quad (\text{Eq. 6})$$

Where:

$P_{\text{max } i}$ = maximum process rate for kiln i, megagrams (tons) per hour

HCl-eq = HCl-equivalent limit in Table 1 to this subpart, 26 kilograms (57 pounds) per hour

$MP_{i\text{HCl}}$ = mass of HCl per unit of production for kiln i, kilograms (pounds) of HCl per megagram (ton) of fired product

$MP_{i\text{HF}}$ = mass of HF per unit of production for kiln i, kilograms (pounds) of HF per megagram (ton) of fired product

$MP_{i\text{Cl}_2}$ = mass of Cl_2 per unit of production for kiln i, kilograms (pounds) of Cl_2 per megagram (ton) of fired product

RfC_{HCl} = reference concentration for HCl, 20 micrograms per cubic meter

RfC_{HF} = reference concentration for HF, 14 micrograms per cubic meter

RfC_{Cl_2} = reference concentration for Cl_2 , 0.15 micrograms per cubic meter

(iv) If you have multiple tunnel kilns at your facility and the total facility maximum potential HCl-equivalent emissions ($E_{\text{max total}}$) are greater than the HCl-equivalent limit in Table 1 to this subpart, determine the combination of maximum process rates that would ensure that total facility maximum potential HCl-equivalent remains at or below the HCl-equivalent limit. The maximum process rates would become your operating limits for process rate and must be included in your OM&M plan.

(h) For each affected kiln that is subject to the emission limits specified in Table 1 to this subpart and is equipped with an APCD that is not addressed in Table 2 to this subpart or that is using process changes as a means of meeting the emission limits in Table 1 to this subpart, you must meet the requirements in § 63.8(f) and paragraphs (h)(1) and (2) of this section.

(1) Submit a request for approval of alternative monitoring procedures to the Administrator no later than the notification of intent to conduct a performance test. The request must contain the information specified in paragraphs (h)(1)(i) through (iv) of this section.

(i) A description of the alternative APCD or process changes.

(ii) The type of monitoring device or procedure that will be used.

(iii) The operating parameters that will be monitored.

(iv) The frequency that the operating parameter values will be determined and recorded to establish continuous compliance with the operating limits.

(2) Establish site-specific operating limits during the performance test based on the information included in the approved alternative monitoring procedures request and, as applicable, as specified in Table 4 to this subpart.

§ 63.8450 What are my monitoring installation, operation, and maintenance requirements?

(a) You must install, operate, and maintain each CMS according to your OM&M plan and the requirements in paragraphs (a)(1) through (5) of this section.

(1) Conduct a performance evaluation of each CMS according to your OM&M plan.

(2) The CMS must complete a minimum of one cycle of operation for each successive 15-minute period. To have a valid hour of data, you must have at least three of four equally spaced data values (or at least 75 percent if you collect more than four data values per hour) for that hour (not including startup, shutdown, malfunction, out-of-control periods, or

periods of routine control device maintenance covered by a routine control device maintenance exemption as specified in § 63.8420(d)).

(3) Determine and record the 3-hour block averages of all recorded readings, calculated after every 3 hours of operation as the average of the previous 3 operating hours. To calculate the average for each 3-hour average period, you must have at least 75 percent of the recorded readings for that period (not including startup, shutdown, malfunction, out-of-control periods, or periods of routine control device maintenance covered by a routine control device maintenance exemption as specified in § 63.8420(d)).

(4) Record the results of each inspection, calibration, and validation check.

(5) At all times, maintain the monitoring equipment including, but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment.

(b) For each liquid flow measurement device, you must meet the requirements in paragraphs (a)(1) through (5) and (b)(1) through (3) of this section.

(1) Locate the flow sensor in a position that provides a representative flowrate.

(2) Use a flow sensor with a minimum measurement sensitivity of 2 percent of the liquid flowrate.

(3) At least semiannually, conduct a flow sensor calibration check.

(c) For each pressure measurement device, you must meet the requirements in paragraphs (a) (1) through (5) and (c) (1) through (7) of this section.

(1) Locate the pressure sensor(s) in or as close to a position that provides a representative measurement of the pressure.

(2) Minimize or eliminate pulsating pressure, vibration, and internal and external corrosion.

(3) Use a gauge with a minimum measurement sensitivity of 0.5 inch of water or a transducer with a minimum measurement sensitivity of 1 percent of the pressure range.

(4) Check the pressure tap daily to ensure that it is not plugged.

(5) Using a manometer, check gauge calibration quarterly and transducer calibration monthly.

(6) Any time the sensor exceeds the manufacturer's specified maximum operating pressure range, conduct calibration checks or install a new pressure sensor.

(7) At least monthly, inspect all components for integrity, all electrical connections for continuity, and all mechanical connections for leakage.

(d) For each pH measurement device, you must meet the requirements in paragraphs (a)(1) through (5) and (d)(1) through (4) of this section.

(1) Locate the pH sensor in a position that provides a representative measurement of pH.

(2) Ensure the sample is properly mixed and representative of the fluid to be measured.

(3) Check the pH meter's calibration on at least two points every 8 hours of process operation.

(4) At least monthly, inspect all components for integrity and all electrical connections for continuity.

(e) For each bag leak detection system, you must meet the requirements in paragraphs (e)(1) through (11) of this section.

(1) Each triboelectric bag leak detection system must be installed, calibrated, operated, and maintained according to the "Fabric Filter Bag Leak Detection Guidance," (EPA-454/R-98-015, September 1997) (incorporated by reference, see § 63.14). Other types of bag leak detection systems must be installed, operated, calibrated, and maintained in a manner consistent with the manufacturer's written specifications and recommendations.

(2) The bag leak detection system must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less.

(3) The bag leak detection system sensor must provide an output of relative PM loadings.

(4) The bag leak detection system must be equipped with a device to continuously record the output signal from the sensor.

(5) The bag leak detection system must be equipped with an audible alarm system that will sound automatically when an increase in relative PM emissions over a preset level is detected. The alarm must be located where it is easily heard by plant operating personnel.

(6) For positive pressure fabric filter systems, a bag leak detector must be installed in each baghouse compartment or cell.

(7) For negative pressure or induced air fabric filters, the bag leak detector must be installed downstream of the fabric filter.

(8) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.

(9) The baseline output must be established by adjusting the range and the averaging period of the device and establishing the alarm set points and the alarm delay time

according to section 5.0 of the "Fabric Filter Bag Leak Detection Guidance," (EPA-454/R-98-015, September 1997) (incorporated by reference, see § 63.14).

(10) Following initial adjustment of the system, the sensitivity or range, averaging period, alarm set points, or alarm delay time may not be adjusted except as detailed in your OM&M plan. In no case may the sensitivity be increased by more than 100 percent or decreased more than 50 percent over a 365-day period unless such adjustment follows a complete fabric filter inspection that demonstrates that the fabric filter is in good operating condition, as defined in section 5.2 of the "Fabric Filter Bag Leak Detection Guidance," (EPA-454/R-98-015, September 1997) (incorporated by reference, see § 63.14). Record each adjustment.

(11) Record the results of each inspection, calibration, and validation check.

(f) For each lime, chemical, or carbon feed rate measurement device, you must meet the requirements in paragraphs (a)(1) through (5) and (f)(1) and (2) of this section.

(1) Locate the measurement device in a position that provides a representative feed rate measurement.

(2) At least semiannually, conduct a calibration check.

(g) For each limestone feed system on a dry limestone adsorber (DLA), you must meet the requirements in paragraphs (a)(1), (4), and (5) of this section and must ensure on a monthly basis that the feed system replaces limestone at least as frequently as the schedule set during the performance test.

(h) Requests for approval of alternate monitoring procedures must meet the requirements in §§ 63.8445(h) and 63.8(f).

§ 63.8455 How do I demonstrate initial compliance with the emission limitations and work practice standards?

(a) You must demonstrate initial compliance with each emission limitation and work practice standard that applies to you according to Table 5 to this subpart.

(b) You must establish each site-specific operating limit in Table 2 to this subpart that applies to you according to the requirements in § 63.8445 and Table 4 to this subpart.

(c) You must submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in § 63.8480(e).

CONTINUOUS COMPLIANCE REQUIREMENTS

§ 63.8465 How do I monitor and collect data to demonstrate continuous compliance?

(a) You must monitor and collect data according to this section.

(b) Except for periods of monitor malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), you must monitor continuously (or collect data at all required intervals) at all times that the affected source is operating. This includes periods of startup, shutdown, malfunction, and routine control device maintenance as specified in § 63.8420(d) when the affected source is operating.

(c) You may not use data recorded during monitoring malfunctions, associated repairs, out-of-control periods, or required quality assurance or control activities for purposes of calculating data averages. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. You must use all the valid data collected during all other periods in assessing compliance. Any averaging period for which you do not have valid monitoring data

and such data are required constitutes a deviation from the monitoring requirements.

§ 63.8470 How do I demonstrate continuous compliance with the emission limitations and work practice standards?

(a) You must demonstrate continuous compliance with each emission limit, operating limit, and work practice standard in Tables 1, 2, and 3 to this subpart that applies to you according to the methods specified in Table 6 to this subpart.

(b) For each affected kiln that is subject to the emission limits specified in Table 1 to this subpart and is equipped with an APCD that is not addressed in Table 2 to this subpart, or that is using process changes as a means of meeting the emission limits in Table 1 to this subpart, you must demonstrate continuous compliance with each emission limit in Table 1 to this subpart, and each operating limit established as required in § 63.8445(h)(2) according to the methods specified in your approved alternative monitoring procedures request, as described in §§ 63.8445(h)(1) and 63.8(f).

(c) You must report each instance in which you did not meet each emission limit and each operating limit in this subpart that applies to you. This includes periods of startup, shutdown, malfunction, and routine control device maintenance. These instances are deviations from the emission limitations in this

subpart. These deviations must be reported according to the requirements in § 63.8485.

(d) Deviations that occur during periods of control device maintenance covered by an approved routine control device maintenance exemption according to § 63.8420(d) are not violations if you demonstrate to the Administrator's satisfaction that you were operating in accordance with the approved routine control device maintenance exemption.

(e) You must demonstrate continuous compliance with the operating limits in Table 2 to this subpart for visible emissions (VE) from tunnel kilns that are uncontrolled or equipped with DLA, dry lime injection fabric filter (DIFF), dry lime scrubber/fabric filter (DLS/FF), or other dry control device by monitoring VE at each kiln stack according to the requirements in paragraphs (e)(1) through (3) of this section.

(1) Perform daily VE observations of each kiln stack according to the procedures of Method 22 of 40 CFR part 60, appendix A-7. You must conduct the Method 22 test while the affected source is operating under normal conditions. The duration of each Method 22 test must be at least 15 minutes.

(2) If VE are observed during any daily test conducted using Method 22 of 40 CFR part 60, appendix A-7, you must promptly initiate and complete corrective actions according to

your OM&M plan. If no VE are observed in 30 consecutive daily Method 22 tests for any kiln stack, you may decrease the frequency of Method 22 testing from daily to weekly for that kiln stack. If VE are observed during any weekly test, you must promptly initiate and complete corrective actions according to your OM&M plan, resume Method 22 testing of that kiln stack on a daily basis, and maintain that schedule until no VE are observed in 30 consecutive daily tests, at which time you may again decrease the frequency of Method 22 testing to a weekly basis.

(3) If VE are observed during any test conducted using Method 22 of 40 CFR part 60, appendix A-7, you must report these deviations by following the requirements in § 63.8485.

NOTIFICATIONS, REPORTS, AND RECORDS

§ 63.8480 What notifications must I submit and when?

(a) You must submit all of the notifications in §§ 63.7(b) and (c), 63.8(f)(4), and 63.9(b) through (e), (g)(1), and (h) that apply to you, by the dates specified.

(b) As specified in § 63.9(b)(2), if you start up your affected source before [DATE 60 DAYS AFTER THE DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER], you must submit an Initial Notification not later than 120 calendar days after [DATE 60 DAYS AFTER THE DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER].

(c) As specified in § 63.9(b)(2), if you start up your new or reconstructed affected source on or after [DATE 60 DAYS AFTER THE DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER], you must submit an Initial Notification not later than 120 calendar days after you become subject to this subpart.

(d) If you are required to conduct a performance test, you must submit a notification of intent to conduct a performance test at least 60 calendar days before the performance test is scheduled to begin, as required in § 63.7(b)(1).

(e) If you are required to conduct a performance test or other initial compliance demonstration as specified in Tables 4 and 5 to this subpart, you must submit a Notification of Compliance Status as specified in § 63.9(h) and paragraphs (e)(1) through (3) of this section.

(1) For each compliance demonstration that includes a performance test conducted according to the requirements in Table 4 to this subpart, you must submit the Notification of Compliance Status, including the performance test results, before the close of business on the 60th calendar day following the completion of the performance test, according to § 63.10(d)(2).

(2) In addition to the requirements in § 63.9(h)(2)(i), you must include the information in paragraphs (e)(2)(i) and (ii) of this section in your Notification of Compliance Status.

(i) The operating limit parameter values established for each affected source with supporting documentation and a description of the procedure used to establish the values.

(ii) For each APCD that includes a fabric filter, if a bag leak detection system is used, analysis and supporting documentation demonstrating conformance with EPA guidance and specifications for bag leak detection systems in § 63.8450(e).

(3) For each compliance demonstration required in Table 5 to this subpart that does not include a performance test (i.e., compliance demonstrations for the work practice standards), you must submit the Notification of Compliance Status before the close of business on the 30th calendar day following the completion of the compliance demonstrations.

(f) If you request a routine control device maintenance exemption according to § 63.8420(d), you must submit your request for the exemption no later than 30 days before the compliance date.

§ 63.8485 What reports must I submit and when?

(a) You must submit each report in Table 7 to this subpart that applies to you.

(b) Unless the Administrator has approved a different schedule for submission of reports under § 63.10(a), you must submit each report by the date in Table 7 to this subpart and as specified in paragraphs (b)(1) through (5) of this section.

(1) The first compliance report must cover the period beginning on the compliance date that is specified for your affected source in § 63.8395 and ending on June 30 or December 31, and lasting at least 6 months, but less than 12 months. For example, if your compliance date is March 1, then the first semiannual reporting period would begin on March 1 and end on December 31.

(2) The first compliance report must be postmarked or delivered no later than July 31 or January 31 for compliance periods ending on June 30 and December 31, respectively.

(3) Each subsequent compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.

(4) Each subsequent compliance report must be postmarked or delivered no later than July 31 or January 31 for compliance periods ending on June 30 and December 31, respectively.

(5) For each affected source that is subject to permitting regulations pursuant to 40 CFR part 70 or 40 CFR part 71, if the permitting authority has established dates for submitting

semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), you may submit the first and subsequent compliance reports according to the dates the permitting authority has established instead of according to the dates in paragraphs (b)(1) through (4) of this section.

(c) The compliance report must contain the information in paragraphs (c)(1) through (7) of this section.

(1) Company name and address.

(2) Statement by a responsible official with that official's name, title, and signature, certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.

(3) Date of report and beginning and ending dates of the reporting period.

(4) A description of control device maintenance performed while the control device was offline and the kiln controlled by the control device was operating, including the information specified in paragraphs (c)(4)(i) through (iii) of this section.

(i) The date and time when the control device was shut down and restarted.

(ii) Identification of the kiln that was operating and the number of hours that the kiln operated while the control device was offline.

(iii) A statement of whether or not the control device maintenance was included in your approved routine control device maintenance exemption developed as specified in § 63.8420(d). If the control device maintenance was included in your approved routine control device maintenance exemption, then you must report the information in paragraphs (c)(4)(iii)(A) through (C) of this section.

(A) The total amount of time that the kiln controlled by the control device operated during the current semiannual compliance period and during the previous semiannual compliance period.

(B) The amount of time that each kiln controlled by the control device operated while the control device was offline for maintenance covered under the routine control device maintenance exemption during the current semiannual compliance period and during the previous semiannual compliance period.

(C) Based on the information recorded under paragraphs (c)(4)(iii)(A) and (B) of this section, compute the annual percent of kiln operating uptime during which the control device

was offline for routine maintenance using Equation 1 of this section.

$$RM = \frac{DT_p + DT_c}{KU_p + KU_c}(100) \quad (\text{Eq. 1})$$

Where:

RM = Annual percentage of kiln uptime during which control device was offline for routine control device maintenance

DT_p = Control device downtime claimed under the routine control device maintenance exemption for the previous semiannual compliance period

DT_c = Control device downtime claimed under the routine control device maintenance exemption for the current semiannual compliance period

KU_p = Kiln uptime for the previous semiannual compliance period

KU_c = Kiln uptime for the current semiannual compliance period

(5) A report of the most recent burner tune-up conducted to comply with the dioxin/furan work practice standard in Table 3 to this subpart.

(6) If there are no deviations from any emission limitations (emission limits or operating limits) that apply to you, the compliance report must contain a statement that there were no deviations from the emission limitations during the reporting period.

(7) If there were no periods during which the CMS was out-of-control as specified in your OM&M plan, the compliance report

must contain a statement that there were no periods during which the CMS was out-of-control during the reporting period.

(d) For each deviation from an emission limitation (emission limit or operating limit) that occurs at an affected source where you are not using a CMS to comply with the emission limitations in this subpart, the compliance report must contain the information in paragraphs (c)(1) through (4) and (d)(1) through (3) of this section. This includes periods of startup, shutdown, and routine control device maintenance.

(1) The total operating time of each affected source during the reporting period and identification of the sources for which there was a deviation.

(2) Information on the number, date, time, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.

(3) The applicable operating limit or work practice standard from which you deviated and either the parameter monitor reading during the deviation or a description of how you deviated from the work practice standard.

(e) For each deviation from an emission limitation (emission limit or operating limit) occurring at an affected source where you are using a CMS to comply with the emission limitations in this subpart, you must include the information in

paragraphs (c)(1) through (4) and (e)(1) through (13) of this section. This includes periods of startup, shutdown, and routine control device maintenance.

(1) The total operating time of each affected source during the reporting period and identification of the sources for which there was a deviation.

(2) The date and time that each CMS was inoperative, except for zero (low-level) and high-level checks.

(3) The date, time, and duration that each CMS was out-of-control, including the pertinent information in your OM&M plan.

(4) The date and time that each deviation started and stopped, and whether each deviation occurred during routine control device maintenance covered in your approved routine control device maintenance exemption or during another period, and the cause of each deviation (including unknown cause, if applicable).

(5) An estimate of the quantity of each regulated pollutant emitted over the emission limit during the deviation, and a description of the method used to estimate the emissions.

(6) A description of corrective action taken in response to a deviation.

(7) A summary of the total duration of the deviation during the reporting period and the total duration as a percent of the total source operating time during that reporting period.

(8) A breakdown of the total duration of the deviations during the reporting period into those that were due to startup, shutdown, control equipment problems, process problems, other known causes, and other unknown causes.

(9) A summary of the total duration of CMS downtime during the reporting period and the total duration of CMS downtime as a percent of the total source operating time during that reporting period.

(10) A brief description of the process units.

(11) A brief description of the CMS.

(12) The date of the latest CMS certification or audit.

(13) A description of any changes in CMS, processes, or control equipment since the last reporting period.

(f) If a malfunction occurred during the reporting period, the compliance report must contain the information in paragraphs (c) (1) through (4) and (f) (1) and (2) of this section.

(1) The number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded.

(2) A description of actions taken by an owner or operator during a malfunction of an affected facility to minimize emissions in accordance with § 63.8420(b), including actions taken to correct a malfunction.

(g) If you have obtained a title V operating permit according to 40 CFR part 70 or 40 CFR part 71, you must report all deviations as defined in this subpart in the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A). If you submit a compliance report according to Table 7 to this subpart along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), and the compliance report includes all required information concerning deviations from any emission limitation (including any operating limit), then submitting the compliance report will satisfy any obligation to report the same deviations in the semiannual monitoring report. However, submitting a compliance report will not otherwise affect any obligation you may have to report deviations from permit requirements to the permitting authority.

(h) Within 60 days after the date of completing each performance test (as defined in § 63.2) as required by this subpart, you must submit the results of the performance test

following the procedure specified in either paragraph (h)(1) or (2) of this section.

(1) For data collected using test methods supported by the EPA's Electronic Reporting Tool (ERT) as listed on the EPA's ERT Web site (<http://www.epa.gov/ttn/chief/ert/index.html>) at the time of the test, you must submit the results of the performance test to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI). (CEDRI can be accessed through the EPA's Central Data Exchange (CDX) (http://cdx.epa.gov/epa_home.asp).) Performance test data must be submitted in a file format generated through the use of the EPA's ERT. Instead of submitting performance test data in a file format generated through the use of the EPA's ERT, you may submit an alternate electronic file format consistent with the extensible markup language (XML) schema listed on the EPA's ERT Web site, once the XML schema is available. If you claim that some of the performance test information being submitted is confidential business information (CBI), you must submit a complete file generated through the use of the EPA's ERT (or an alternate electronic file consistent with the XML schema listed on the EPA's ERT Web site once the XML schema is available), including information claimed to be CBI, on a compact disc, flash drive, or other commonly used electronic storage media to the EPA. The

electronic media must be clearly marked as CBI and mailed to U.S. EPA/OAPQS/CORE CBI Office, Attention: Group Leader, Measurement Policy Group, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same ERT file (or alternate file) with the CBI omitted must be submitted to the EPA via the EPA's CDX as described earlier in this paragraph.

(2) For data collected using test methods that are not supported by the EPA's ERT as listed on the EPA's ERT Web site at the time of the test, you must submit the results of the performance test to the Administrator at the appropriate address listed in § 63.13.

§ 63.8490 What records must I keep?

(a) You must keep the records listed in paragraphs (a)(1) through (3) of this section.

(1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted, according to the requirements in § 63.10(b)(2)(xiv).

(2) Records of performance tests as required in § 63.10(b)(2)(viii).

(3) Records relating to control device maintenance and documentation of your approved routine control device

maintenance exemption, if you request such an exemption under § 63.8420(d).

(b) You must keep the records required in Table 6 to this subpart to show continuous compliance with each emission limitation and work practice standard that applies to you.

(c) You must also maintain the records listed in paragraphs (c)(1) through (11) of this section.

(1) For each bag leak detection system, records of each alarm, the time of the alarm, the time corrective action was initiated and completed, and a brief description of the cause of the alarm and the corrective action taken.

(2) For each deviation of an operating limit parameter value, the date, time, and duration of the deviation, a brief explanation of the cause of the deviation, actions taken to minimize emissions in accordance with § 63.8420(b) and the corrective action taken to return the affected unit to its normal or usual manner of operation, and whether the deviation occurred during a period of startup, shutdown, or malfunction. Record and retain a list of the affected sources or equipment, an estimate of the volume of each regulated pollutant emitted over any emission limit and a description of the method used to estimate the emissions.

(3) For each affected source, records of production rates on a fired-product basis.

(4) Records for any approved alternative monitoring or test procedures.

(5) Records of maintenance and inspections performed on the APCD.

(6) Current copies of your OM&M plan, including any revisions, with records documenting conformance.

(7) Logs of the information required in paragraphs (c)(7)(i) through (iii) of this section to document proper operation of your periodic kiln.

(i) Records of the firing time and temperature cycle for each product produced in each periodic kiln. If all periodic kilns use the same time and temperature cycles, one copy may be maintained for each kiln. Reference numbers must be assigned to use in log sheets.

(ii) For each periodic kiln, a log that details the type of product fired in each batch, the corresponding time and temperature protocol reference number, and an indication of whether the appropriate time and temperature cycle was fired.

(iii) For each periodic kiln, a log of the actual tonnage of product fired in the periodic kiln and an indication of

whether the tonnage was below the maximum tonnage for that specific kiln.

(8) Logs of the maintenance procedures used to demonstrate compliance with the maintenance requirements of the periodic kiln work practice standard specified in Table 3 to this subpart.

(9) Records of burner tune-ups used to comply with the dioxin/furan work practice standard for tunnel kilns.

(10) For periods of startup, records of the date, time, and duration of each startup period, logs of the kiln exhaust temperature at the time the first bricks were placed in the kiln, and if applicable, logs of the temperature when the kiln exhaust stopped bypassing the control device. For periods of shutdown, records of the date, time, and duration of each shutdown period, logs of the kiln exhaust temperature at the time the last bricks were placed in the kiln, and if applicable, logs of the temperature when the kiln exhaust began bypassing the control device.

(11) For each malfunction, records of the following information:

(i) Records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment.

(ii) Records of actions taken during periods of malfunction to minimize emissions in accordance with § 63.8420(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

§ 63.8495 In what form and for how long must I keep my records?

(a) Your records must be in a form suitable and readily available for expeditious review, according to § 63.10(b)(1).

(b) As specified in § 63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(c) You must keep each record onsite for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to § 63.10(b)(1). You may keep the records offsite for the remaining 3 years.

OTHER REQUIREMENTS AND INFORMATION

§ 63.8505 What parts of the General Provisions apply to me?

Table 8 to this subpart shows which parts of the General Provisions in §§ 63.1 through 63.16 apply to you.

§ 63.8510 Who implements and enforces this subpart?

(a) This subpart can be implemented and enforced by us, the U.S. EPA, or a delegated authority such as your State, local, or

tribal agency. If the U.S. EPA Administrator has delegated authority to your State, local, or tribal agency, then that agency, in addition to the U.S. EPA, has the authority to implement and enforce this subpart. You should contact your U.S. EPA Regional Office to find out if implementation and enforcement of this subpart is delegated to your State, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under subpart E of this part, the authorities contained in paragraph (c) of this section are retained by the Administrator of the U.S. EPA and are not transferred to the State, local, or tribal agency.

(c) The authorities that cannot be delegated to State, local, or tribal agencies are as specified in paragraphs (c) (1) through (5) of this section.

(1) Approval of alternatives to the applicability requirements in §§ 63.8385 and 63.8390, the compliance date requirements in § 63.8395, and the non-opacity emission limitations in § 63.8405.

(2) Approval of major changes to test methods under § 63.7(e) (2) (ii) and (f) and as defined in § 63.90.

(3) Approval of major changes to monitoring under § 63.8(f) and as defined in § 63.90.

(4) Approval of major changes to recordkeeping and reporting under § 63.10(f) and as defined in § 63.90.

(5) Approval of an alternative to any electronic reporting to the EPA required by this subpart.

§ 63.8515 What definitions apply to this subpart?

Terms used in this subpart are defined in the Clean Air Act, in § 63.2, and in this section as follows:

Air pollution control device (APCD) means any equipment that reduces the quantity of a pollutant that is emitted to the air.

Bag leak detection system means an instrument that is capable of monitoring PM loadings in the exhaust of a fabric filter in order to detect bag failures. A bag leak detection system includes, but is not limited to, an instrument that operates on triboelectric, light-scattering, light-transmittance, or other effects to monitor relative PM loadings.

Brick and structural clay products (BSCP) manufacturing facility means a plant site that manufactures brick (including, but not limited to, face brick, structural brick, and brick pavers); clay pipe; roof tile; extruded floor and wall tile; and/or other extruded, dimensional clay products. Brick and

structural clay products manufacturing facilities typically process raw clay and shale, form the processed materials into bricks or shapes, and dry and fire the bricks or shapes.

Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

(1) Fails to meet any requirement or obligation established by this subpart including, but not limited to, any emission limitation (including any operating limit) or work practice standard; or

(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart for any affected source required to obtain such a permit.

Dry lime injection fabric filter (DIFF) means an APCD that includes continuous injection of hydrated lime or other sorbent into a duct or reaction chamber followed by a fabric filter.

Dry lime scrubber/fabric filter (DLS/FF) means an APCD that includes continuous injection of humidified hydrated lime or other sorbent into a reaction chamber followed by a fabric filter. These systems typically include recirculation of some of the sorbent.

Dry limestone adsorber (DLA) means an APCD that includes a limestone storage bin, a reaction chamber that is essentially a

packed tower filled with limestone, and may or may not include a peeling drum that mechanically scrapes reacted limestone to regenerate the stone for reuse.

Emission limitation means any emission limit or operating limit.

Fabric filter means an APCD used to capture PM by filtering a gas stream through filter media; also known as a baghouse.

Initial startup means:

(1) for a new or reconstructed tunnel kiln controlled with a DLA, the time at which the temperature in the kiln first reaches 260°C (500°F) and the kiln contains product; or

(2) for a new or reconstructed tunnel kiln controlled with a DIFF, DLS/FF, or wet scrubber (WS), the time at which the kiln first reaches a level of production that is equal to 75 percent of the kiln design capacity or 12 months after the affected source begins firing BSCP, whichever is earlier.

Kiln exhaust process stream means the portion of the exhaust from a tunnel kiln that exhausts directly to the atmosphere (or to an APCD), rather than to a sawdust dryer.

Large tunnel kiln means a tunnel kiln (existing, new, or reconstructed) with a design capacity equal to or greater than 9.07 Mg/hr (10 tph) of fired product.

Particulate matter (PM) means, for purposes of this subpart, emissions of PM that serve as a measure of total particulate emissions, as measured by Method 5 (40 CFR part 60, appendix A-3) or Method 29 (40 CFR part 60, appendix A-8), and as a surrogate for metal HAP contained in the particulates including, but not limited to, antimony, arsenic, beryllium, cadmium, chromium, cobalt, lead, manganese, mercury, nickel, and selenium.

Periodic kiln means a batch firing kiln.

Plant site means all contiguous or adjoining property that is under common control, including properties that are separated only by a road or other public right-of-way. Common control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, or any combination thereof.

Responsible official means responsible official as defined in 40 CFR 70.2.

Small tunnel kiln means a tunnel kiln (existing, new, or reconstructed) with a design capacity less than 9.07 Mg/hr (10 tph) of fired product.

Startup means the setting in operation of an affected source and starting the production process.

Tunnel kiln means any continuous kiln that is used to fire BSCP. Some tunnel kilns have two process streams, including a process stream that exhausts directly to the atmosphere or to an APCD, and a process stream in which the kiln exhaust is ducted to a sawdust dryer where it is used to dry sawdust before being emitted to the atmosphere.

Tunnel kiln design capacity means the maximum amount of brick, in Mg (tons), that a kiln is designed to produce in one year divided by the number of hours in a year (8,760 hours). If a kiln is modified to increase the capacity, the design capacity is considered to be the capacity following modifications.

Wet scrubber (WS) means an APCD that uses water, which may include caustic additives or other chemicals, as the sorbent. Wet scrubbers may use any of various design mechanisms to increase the contact between exhaust gases and the sorbent.

Work practice standard means any design, equipment, work practice, operational standard, or combination thereof, that is promulgated pursuant to section 112(h) of the Clean Air Act.

TABLES TO SUBPART JJJJJ OF PART 63

Table 1 to Subpart JJJJJ of Part 63--Emission Limits

As stated in § 63.8405, you must meet each emission limit in the following table that applies to you.

For each...	You must meet the following emission limits...	Or you must comply with the following...
1. Collection of all tunnel kilns at facility, including all process streams.	HF, HCl, and Cl ₂ emissions must not exceed 26 kg/hr (57 lb/hr) HCl equivalent, under the health-based standard, as determined using Equations 2 and 3 of § 63.8445.	Not applicable.
2. Existing tunnel kiln, including all process streams.	a. PM emissions must not exceed 0.082 kg/Mg (0.16 lb/ton) of fired product.	i. PM emissions must not exceed 92 mg/dscm (0.040 gr/dscf) at 7% O ₂ ; or ii. Non-Hg HAP metals emissions must not exceed 0.0011 kg/hr (0.023 lb/hr) of fired product.
3. Existing large tunnel kiln (design capacity ≥10 tph of fired product), including all process streams.	a. Hg emissions must not exceed 1.1 E-05 kilogram per megagram (kg/Mg) (2.2 E-05 pound per ton (lb/ton)) of fired product.	i. Hg emissions must not exceed 29 micrograms per dry standard cubic meter (µg/dscm) at 7% O ₂ ; or ii. Hg emissions must not exceed 1.2 E-04 kg/hr (2.7 E-04 lb/hr).
4. Existing small tunnel kiln (design capacity <10 tph of fired product), including all process streams.	a. Hg emissions must not exceed 9.9 E-05 kg/Mg (2.0 E-04 lb/ton) of fired product.	i. Hg emissions must not exceed 70 µg/dscm at 7% O ₂ ; or ii. Hg emissions must not exceed 5.0 E-04 kg/hr (0.0011 lb/hr).
5. New or reconstructed tunnel kiln, including all process streams	a. PM emissions must not exceed 0.011 kg/Mg (0.022 lb/ton) of fired product.	i. PM emissions must not exceed 15 mg/dscm (0.0066 gr/dscf) at 7% O ₂ ; or ii. Non-Hg HAP metals emissions must not exceed 0.0014 kg/hr (0.0032 lb/hr) of fired product.

For each...	You must meet the following emission limits...	Or you must comply with the following...
6. New or reconstructed large tunnel kiln, including all process streams.	a. Hg emissions must not exceed 1.0 E-05 kg/Mg (2.0 E-05 lb/ton) of fired product.	i. Hg emissions must not exceed 13 µg/dscm at 7% O ₂ .
		ii. Hg emissions must not exceed 1.1 E-04 kg/hr (2.4 E-04 lb/hr).
7. New or reconstructed small tunnel kiln, including all process streams.	a. Hg emissions must not exceed 9.9 E-05 kg/Mg (2.0 E-04 lb/ton) of fired product.	i. Hg emissions must not exceed 70 µg/dscm at 7% O ₂ .
		ii. Hg emissions must not exceed 5.0 E-04 kg/hr (0.0011 lb/hr).

Table 2 to Subpart JJJJJ of Part 63--Operating Limits

As stated in § 63.8405, you must meet each operating limit in the following table that applies to you.

For each...	You must...
1. Tunnel kiln equipped with a DLA.	a. Maintain the average pressure drop across the DLA for each 3-hour block period at or above the average pressure drop established during the HF/HCl/Cl ₂ performance test; or, if you are monitoring the bypass stack damper position, initiate corrective action within 1 hour after the bypass damper is opened allowing the kiln exhaust gas to bypass the DLA and complete corrective action in accordance with your OM&M plan; and
	b. Maintain an adequate amount of limestone in the limestone hopper, storage bin (located at the top of the DLA), and DLA at all times; maintain the limestone feeder setting (on a per ton of fired product basis) at or above the level established during the HF/HCl/Cl ₂ performance test; and
	c. Use the same grade of limestone from the same source as was used during the HF/HCl/Cl ₂ performance test; maintain records of the source and grade of limestone; and
	d. Maintain no VE from the DLA stack.

For each...	You must...
2. Tunnel kiln equipped with a DIFF or DLS/FF.	a. If you use a bag leak detection system, initiate corrective action within 1 hour of a bag leak detection system alarm and complete corrective actions in accordance with your OM&M plan; operate and maintain the fabric filter such that the alarm is not engaged for more than 5 percent of the total operating time in a 6-month block reporting period; or maintain no VE from the DIFF or DLS/FF stack; and
	b. Maintain free-flowing lime in the feed hopper or silo and to the APCD at all times for continuous injection systems; maintain the feeder setting (on a per ton of fired product basis) at or above the level established during the HF/HCl/Cl ₂ performance test for continuous injection systems.
3. Tunnel kiln equipped with a WS.	a. Maintain the average scrubber pressure drop for each 3-hour block period at or above the average pressure drop established during the PM/non-Hg HAP metals performance test; and
	b. Maintain the average scrubber liquid pH for each 3-hour block period at or above the average scrubber liquid pH established during the HF/HCl/Cl ₂ performance test; and
	c. Maintain the average scrubber liquid flow rate for each 3-hour block period at or above the highest average scrubber liquid flow rate established during the HF/HCl/Cl ₂ and PM/non-Hg HAP metals performance tests; and
	d. If chemicals are added to the scrubber water, maintain the average scrubber chemical feed rate for each 3-hour block period at or above the average scrubber chemical feed rate established during the HF/HCl/Cl ₂ performance test.
4. Tunnel kiln equipped with an ACI system.	Maintain the average carbon flow rate for each 3-hour block period at or above the average carbon flow rate established during the Hg performance test.
5. Tunnel kiln with no add-on control.	a. Maintain no VE from the stack.
	b. Maintain the kiln process rate at or below the kiln process rate determined according to § 63.8445(g)(1).

Table 3 to Subpart JJJJJ of Part 63--Work Practice Standards

As stated in § 63.8405, you must meet each work practice standard in the following table that applies to you.

For each...	You must...	According to the following requirements...
1. Existing, new or reconstructed periodic kiln	a. Minimize HAP emissions.	i. Develop and use a designed firing time and temperature cycle for each product produced in the periodic kiln. You must either program the time and temperature cycle into your kiln or track each step on a log sheet; and
		ii. Label each periodic kiln with the maximum load (in tons) of product that can be fired in the kiln during a single firing cycle; and
		iii. For each firing load, document the total tonnage of product placed in the kiln to ensure that it is not greater than the maximum load identified in item 1b; and
		iv. Develop and follow maintenance procedures for each kiln that, at a minimum, specify the frequency of inspection and maintenance of temperature monitoring devices, controls that regulate air-to-fuel ratios, and controls that regulate firing cycles; and
		v. Develop and maintain records for each periodic kiln, as specified in § 63.8490.
2. Existing, new or reconstructed tunnel kiln	a. Minimize dioxin/furan emissions.	i. Maintain and inspect the burners and associated combustion controls (as applicable); and
		ii. Tune the specific burner type to optimize combustion.
3. Existing, new or reconstructed tunnel kiln during periods of startup	a. Minimize HAP emissions.	i. Do not put any bricks into the kiln until the kiln exhaust temperature reaches 204 °C (400 °F); and
		ii. If your kiln has an APCD, begin venting the exhaust from the kiln through the APCD by the time the kiln exhaust temperature reaches 204 °C (400 °F).
4. Existing, new or reconstructed tunnel kiln during periods of shutdown	a. Minimize HAP emissions.	i. Do not put any bricks into the kiln once the kiln exhaust temperature falls to 149 °C (300 °F); and
		ii. If your kiln has an APCD, continue to vent the exhaust from the kiln through the APCD until the kiln exhaust temperature falls to 149 °C (300 °F).

Table 4 to Subpart JJJJJ of Part 63--Requirements for Performance Tests

As stated in § 63.8445, you must conduct each performance test in the following table that applies to you.

For each...	You must...	Using...	According to the following requirements...
1. Tunnel kiln.	a. Select locations of sampling ports and the number of traverse points.	Method 1 or 1A of 40 CFR part 60, appendix A-1.	Sampling sites must be located at the outlet of the APCD and prior to any releases to the atmosphere for all affected sources.
	b. Determine velocities and volumetric flow rate.	Method 2 of 40 CFR part 60, appendix A-1.	You may use Method 2A, 2C, 2D, or 2F of 40 CFR part 60, appendix A-1, or Method 2G of 40 CFR part 60, appendix A-2, as appropriate, as an alternative to using Method 2 of 40 CFR part 60, appendix A-1.
	c. Conduct gas molecular weight analysis.	Method 3 of 40 CFR part 60, appendix A-2.	You may use Method 3A or 3B of 40 CFR part 60, appendix A-2, as appropriate, as an alternative to using Method 3 of 40 CFR part 60, appendix A-2. ANSI/ASME PTC 19.10-1981 [Part 10] (incorporated by reference, see § 63.14) may be used as an alternative to the manual procedures (but not the instrumental procedures) in Methods 3A and 3B.
	d. Measure moisture content of the stack gas.	Method 4 of 40 CFR part 60, appendix A-3.	

For each...	You must...	Using...	According to the following requirements...
	e. Measure HF, HCl and Cl ₂ emissions.	Method 26A of 40 CFR part 60, appendix A-8; or	You may use Method 26 of 40 CFR part 60, appendix A-8, as an alternative to using Method 26A of 40 CFR part 60, appendix A-8, when no acid PM (e.g., HF or HCl dissolved in water droplets emitted by sources controlled by a WS) is present. ASTM D6735-01 (Reapproved 2009) (incorporated by reference, see § 63.14) may be used as an alternative to Methods 26 and 26A.
		Method 320 of appendix A of this part.	When using Method 320 of appendix A of this part, you must follow the analyte spiking procedures of section 13 of Method 320 of appendix A of this part, unless you can demonstrate that the complete spiking procedure has been conducted at a similar source. ASTM D6348-03 (Reapproved 2010) (incorporated by reference, see § 63.14) may be used as an alternative to Method 320 if the test plan preparation and implementation in Annexes A1-A8 are mandatory and the %R in Annex A5 is determined for each target analyte.
	f. Measure PM emissions or non-Hg HAP metals.	i. For PM only: Method 5 of 40 CFR part 60, appendix A-3; or	
		ii. For PM or non-Hg HAP metals: Method 29 of 40 CFR part 60, appendix A-8.	To determine PM, weigh the filter and report the results as PM filterable.

For each...	You must...	Using...	According to the following requirements...
	g. Measure Hg emissions.	Method 29 of 40 CFR part 60, appendix A-8.	ASTM D6784-02 (Reapproved 2008) (incorporated by reference, see § 63.14) may be used as an alternative to Method 29 (portion for Hg only).
2. Tunnel kiln with no add-on control.	Establish the operating limit(s) for kiln process rate if the total facility maximum potential HCl-equivalent emissions are greater than the HCl-equivalent limit in Table 1 to this subpart.	HCl-equivalent limit in Table 1 to this subpart and emissions and production data from the HF/HCl/Cl ₂ performance test.	Using the procedures in § 63.8445(g)(1), you must determine the maximum process rate(s) for your kiln(s) that would ensure total facility maximum potential HCl-equivalent emissions remain at or below the HCl-equivalent limit in Table 1 to this subpart. The maximum process rate(s) would become your site-specific process rate operating limit(s).
3. Tunnel kiln that is complying with PM and/or Hg production-based emission limits.	Determine the production rate during each PM/Hg test run in order to determine compliance with PM and/or Hg production-based emission limits.	Production data collected during the PM/Hg performance tests (e.g., no. of pushes per hour, no. of bricks per kiln car, weight of a typical fired brick).	You must measure and record the production rate, on a fired-product basis, of the affected source for each of the three test runs.
4. Tunnel kiln equipped with a DLA.	a. Establish the operating limit for the average pressure drop across the DLA.	Data from the pressure drop measurement device during the HF/HCl/Cl ₂ performance test.	You must continuously measure the pressure drop across the DLA, determine and record the block average pressure drop values for the three test runs, and determine and record the 3-hour block average of the recorded pressure drop measurements for the three test runs. The average of the three test runs establishes your minimum site-specific pressure drop operating limit.

For each...	You must...	Using...	According to the following requirements...
	b. Establish the operating limit for the limestone feeder setting.	Data from the limestone feeder during the HF/HCl/Cl ₂ performance test.	You must ensure that you maintain an adequate amount of limestone in the limestone hopper, storage bin (located at the top of the DLA), and DLA at all times during the performance test. You must establish your limestone feeder setting, on a per ton of fired product basis, one week prior to the performance test and maintain the feeder setting for the one-week period that precedes the performance test and during the performance test.
	c. Document the source and grade of limestone used.	Records of limestone purchase.	
5. Tunnel kiln equipped with a DIFF or DLS/FF.	Establish the operating limit for the lime feeder setting.	Data from the lime feeder during the HF/HCl/Cl ₂ performance test.	For continuous lime injection systems, you must ensure that lime in the feed hopper or silo and to the APCD is free-flowing at all times during the performance test and record the feeder setting, on a per ton of fired product basis, for the three test runs. If the feed rate setting varies during the three test runs, determine and record the average feed rate from the three test runs. The average of the three test runs establishes your minimum site-specific feed rate operating limit.

For each...	You must...	Using...	According to the following requirements...
6. Tunnel kiln equipped with a WS.	a. Establish the operating limit for the average scrubber pressure drop.	Data from the pressure drop measurement device during the PM/non-Hg HAP metals performance test.	You must continuously measure the scrubber pressure drop, determine and record the block average pressure drop values for the three test runs, and determine and record the 3-hour block average of the recorded pressure drop measurements for the three test runs. The average of the three test runs establishes your minimum site-specific pressure drop operating limit.
	b. Establish the operating limit for the average scrubber liquid pH.	Data from the pH measurement device during the performance HF/HCl/Cl ₂ performance test.	You must continuously measure the scrubber liquid pH, determine and record the block average pH values for the three test runs, and determine and record the 3-hour block average of the recorded pH measurements for the three test runs. The average of the three test runs establishes your minimum site-specific liquid pH operating limit.

For each...	You must...	Using...	According to the following requirements...
	c. Establish the operating limit for the average scrubber liquid flow rate.	Data from the flow rate measurement device during the HF/HCl/Cl ₂ and PM/non-Hg HAP metals performance tests.	You must continuously measure the scrubber liquid flow rate, determine and record the block average flow rate values for the three test runs, and determine and record the 3-hour block average of the recorded flow rate measurements for the three test runs. The average of the three test runs establishes your minimum site-specific liquid flow rate operating level. If different average wet scrubber liquid flow rate values are measured during the HF/HCl/Cl ₂ and PM/non-Hg HAP metals tests, the highest of the average values become your site-specific operating limit.
7. Tunnel kiln equipped with a WS that includes chemical addition to the water.	Establish the operating limit for the average scrubber chemical feed rate.	Data from the chemical feed rate measurement device during the HF/HCl/Cl ₂ performance test.	You must continuously measure the scrubber chemical feed rate, determine and record the block average chemical feed rate values for the three test runs, and determine and record the 3-hour block average of the recorded chemical feed rate measurements for the three test runs. The average of the three test runs establishes your minimum site-specific chemical addition rate operating limit.

For each...	You must...	Using...	According to the following requirements...
8. Tunnel kiln equipped with an ACI system	Establish the operating limit for the average carbon flow rate.	Data from the carbon flow rate measurement conducted during the Hg performance test.	You must measure the carbon flow rate during each test run, determine and record the block average carbon flow rate values for the three test runs, and determine and record the 3-hour block average of the recorded carbon flow rate measurements for the three test runs. The average of the three test runs establishes your minimum site-specific activated carbon flow rate operating limit.

Table 5 to Subpart JJJJJ of Part 63--Initial Compliance with Emission Limitations and Work Practice Standards

As stated in § 63.8455, you must demonstrate initial compliance with each emission limitation and work practice standard that applies to you according to the following table.

For each...	For the following...	You have demonstrated initial compliance if...
1. Collection of all tunnel kilns at the facility, including all process streams.	a. HF, HCl, and Cl ₂ emissions must not exceed 26 kg/hr (57 lb/hr) HCl equivalent.	i. You measure HF, HCl, and Cl ₂ emissions for each kiln using Method 26 or 26A of 40 CFR part 60, appendix A-8 or its alternative, ASTM D6735-01 (Reapproved 2009) (incorporated by reference, see § 63.14); or Method 320 of appendix A of this part or its alternative, ASTM D6348-03 (Reapproved 2010) (incorporated by reference, see § 63.14); and
		ii. You calculate the HCl-equivalent emissions for each kiln using Equation 2 to § 63.8445; and
		iii. You sum the HCl-equivalent values for all kilns at the facility using Equation 3 of § 63.8445; and

For each...	For the following...	You have demonstrated initial compliance if...
		iv. The facility total HCl-equivalent does not exceed 26 kg/hr (57 lb/hr).
2. Existing tunnel kiln, including all process streams.	a. PM emissions must not exceed 0.082 kg/Mg (0.16 lb/ton) of fired product or 92 mg/dscm (0.040 gr/dscf) at 7% O ₂ ; or	i. The PM emissions measured using Method 5 of 40 CFR part 60, appendix A-3 or Method 29 of 40 CFR part 60, appendix A-8, over the period of the initial performance test, according to the calculations in § 63.8445(f)(1), do not exceed 0.082 kg/Mg (0.16 lb/ton) of fired product or 92 mg/dscm (0.040 gr/dscf) at 7% O ₂ ; and
		ii. You establish and have a record of the applicable operating limits listed in Table 2 to this subpart over the 3-hour performance test during which PM emissions did not exceed 0.088 kg/Mg (0.18 lb/ton) of fired product or 97 mg/dscm (0.043 gr/dscf) at 7% O ₂ .
	b. Non-Hg HAP metals emissions must not exceed 0.011 kg/hr (0.023 lb/hr).	i. The non-Hg HAP metals emissions measured using Method 29 of 40 CFR part 60, appendix A-8, over the period of the initial performance test, do not exceed 0.011 kg/hr (0.023 lb/hr); and
		ii. You establish and have a record of the applicable operating limits listed in Table 2 to this subpart over the 3-hour performance test during which non-Hg HAP metals emissions did not exceed 0.0114 kg/hr (0.023 lb/hr).
3. Existing large tunnel kiln (design capacity ≥10 tph of fired product), including all process streams.	a. Hg emissions must not exceed 1.1 E-05 kg/Mg (2.2 E-05 lb/ton) of fired product or 29 µg/dscm at 7% O ₂ or 1.2 E-04 kg/hr (2.7 E-04 lb/hr).	i. The Hg emissions measured using Method 29 of 40 CFR part 60, appendix A-8 or its alternative, ASTM D6784-02 (Reapproved 2008) (incorporated by reference, see § 63.14), over the period of the initial performance test, do not exceed 1.1 E-05 kg/Mg (2.2 E-05 lb/ton) of fired product or 29 µg/dscm at 7% O ₂ or 1.2 E-04 kg/hr (2.7 E-04 lb/hr); and
		ii. You establish and have a record of the applicable operating limits listed in Table 2 to this subpart over the 3-hour performance test during which Hg emissions did not exceed 1.1 E-05 kg/Mg (2.2 E-05 lb/ton) of fired product or 29 µg/dscm at 7% O ₂ or 1.2 E-04 kg/hr (2.7 E-04 lb/hr).

For each...	For the following...	You have demonstrated initial compliance if...
4. Existing small tunnel kiln (design capacity <10 tph of fired product), including all process streams.	a. Hg emissions must not exceed 9.9 E-05 kg/Mg (2.0 E-04 lb/ton) of fired product or 70 µg/dscm at 7% O ₂ or 5.0 E-04 kg/hr (0.0011 lb/hr).	i. The Hg emissions measured using Method 29 of 40 CFR part 60, appendix A-8 or its alternative, ASTM D6784-02 (Reapproved 2008) (incorporated by reference, see § 63.14), over the period of the initial performance test, do not exceed 9.9 E-05 kg/Mg (2.0 E-04 lb/ton) of fired product or 70 µg/dscm at 7% O ₂ or 5.0 E-04 kg/hr (0.0011 lb/hr); and
		ii. You establish and have a record of the applicable operating limits listed in Table 2 to this subpart over the 3-hour performance test during which Hg emissions did not exceed 9.9 E-05 kg/Mg (2.0 E-04 lb/ton) of fired product or 70 µg/dscm at 7% O ₂ or 5.0 E-04 kg/hr (0.0011 lb/hr).
5. New or reconstructed tunnel kiln, including all process streams.	a. PM emissions must not exceed 0.011 kg/Mg (0.022 lb/ton) of fired product or 15 mg/dscm at 7% O ₂ ; or	i. The PM emissions measured using Method 5 of 40 CFR part 60, appendix A-3, over the period of the initial performance test, according to the calculations in § 63.8445(f)(1), do not exceed 0.011 kg/Mg (0.022 lb/ton) of fired product or 15 mg/dscm at 7% O ₂ ; and
		ii. You establish and have a record of the applicable operating limits listed in Table 2 to this subpart over the 3-hour performance test during which PM emissions did not exceed 0.011 kg/Mg (0.022 lb/ton) of fired product or 15 mg/dscm at 7% O ₂ .
	b. Non-Hg HAP metals emissions must not exceed 0.0014 kg/hr (0.0032 lb/hr).	i. The non-Hg HAP metals emissions measured using Method 29 of 40 CFR part 60, appendix A-8, over the period of the initial performance test, do not exceed 0.0014 kg/hr (0.0032 lb/hr); and
		ii. You establish and have a record of the applicable operating limits listed in Table 2 to this subpart over the 3-hour performance test during which non-Hg HAP metals emissions did not exceed 0.0014 kg/hr (0.0032 lb/hr).

For each...	For the following...	You have demonstrated initial compliance if...
6. New or reconstructed large tunnel kiln, including all process streams.	a. Hg emissions must not exceed 1.0 E-05 kg/Mg (2.0 E-05 lb/ton) of fired product or 13 µg/dscm at 7% O ₂ or 1.1 E-04 kg/hr (2.4 E-04 lb/hr).	i. The Hg emissions measured using Method 29 of 40 CFR part 60, appendix A-8 or its alternative, ASTM D6784-02 (Reapproved 2008) (incorporated by reference, see § 63.14), over the period of the initial performance test, do not exceed 1.0 E-05 kg/Mg (2.0 E-05 lb/ton) of fired product or 13 µg/dscm at 7% O ₂ ; and
		ii. You establish and have a record of the applicable operating limits listed in Table 2 to this subpart over the 3-hour performance test during which Hg emissions did not exceed 1.0 E-05 kg/Mg (2.0 E-05 lb/ton) of fired product or 13 µg/dscm at 7% O ₂ or 1.1 E-04 kg/hr (2.4 E-04 lb/hr).
7. New or reconstructed small tunnel kiln, including all process streams.	a. Hg emissions must not exceed 9.9 E-05 kg/Mg (2.0 E-04 lb/ton) of fired product or 70 µg/dscm at 7% O ₂ or 5.0 E-04 kg/hr (0.0011 lb/hr).	i. The Hg emissions measured using Method 29 of 40 CFR part 60, appendix A-8 or its alternative, ASTM D6784-02 (Reapproved 2008) (incorporated by reference, see § 63.14), over the period of the initial performance test, do not exceed 9.9 E-05 kg/Mg (2.0 E-04 lb/ton) of fired product or 70 µg/dscm at 7% O ₂ or 5.0 E-04 kg/hr (0.0011 lb/hr); and
		ii. You establish and have a record of the applicable operating limits listed in Table 2 to this subpart over the 3-hour performance test during which Hg emissions did not exceed 9.9 E-05 kg/Mg (2.0 E-04 lb/ton) of fired product or 70 µg/dscm at 7% O ₂ .
	a. Minimize HAP emissions.	i. Develop a designed firing time and temperature cycle for each product produced in the periodic kiln. You must either program the time and temperature cycle into your kiln or track each step on a log sheet; and
		ii. Label each periodic kiln with the maximum load (in tons) of product that can be fired in the kiln during a single firing cycle; and

For each...	For the following...	You have demonstrated initial compliance if...
		iii. Develop maintenance procedures for each kiln that, at a minimum, specify the frequency of inspection and maintenance of temperature monitoring devices, controls that regulate air-to-fuel ratios, and controls that regulate firing cycles.
9. Existing, new or reconstructed tunnel kiln.	a. Minimize dioxin/furan emissions.	i. Conduct initial inspection of the burners and associated combustion controls (as applicable); and
		ii. Tune the specific burner type to optimize combustion.

Table 6 to Subpart JJJJJ of Part 63--Continuous Compliance with Emission Limitations and Work Practice Standards

As stated in § 63.8470, you must demonstrate continuous compliance with each emission limitation and work practice standard that applies to you according to the following table.

For each...	For the following...	You must demonstrate continuous compliance by...
1. Tunnel kiln equipped with a DLA.	a. Each emission limit in Table 1 to this subpart and each operating limit in Item 1 of Table 2 to this subpart for tunnel kilns equipped with a DLA.	i. Collecting the DLA pressure drop data according to § 63.8450(a); reducing the DLA pressure drop data to 3-hour block averages according to § 63.8450(a); maintaining the average pressure drop across the DLA for each 3-hour block period at or above the average pressure drop established during the HF/HCl/Cl ₂ performance test; or continuously monitoring the bypass stack damper position at least once every 15 minutes during normal kiln operation, and initiating corrective action within 1 hour after the bypass damper is opened allowing the kiln exhaust gas to bypass the DLA and completing corrective action in accordance with your OM&M plan; and

For each...	For the following...	You must demonstrate continuous compliance by...
		<p>ii. Verifying that the limestone hopper and storage bin (located at the top of the DLA) contain adequate limestone by performing a daily visual check, which could include one of the following: (1) conducting a physical check of the hopper; (2) creating a visual access point, such as a window, on the side of the hopper; (3) installing a camera in the hopper that provides continuous feed to a video monitor in the control room; or (4) confirming that load level indicators in the hopper are not indicating the need for additional limestone; and</p> <p>iii. Recording the limestone feeder setting daily (on a per ton of fired product basis) to verify that the feeder setting is being maintained at or above the level established during the HF/HCl/Cl₂ performance test; and</p> <p>iv. Using the same grade of limestone from the same source as was used during the HF/HCl/Cl₂ performance test; maintaining records of the source and type of limestone; and</p> <p>v. Performing VE observations of the DLA stack at the frequency specified in § 63.8470(e) using Method 22 of 40 CFR part 60, appendix A-7; maintaining no VE from the DLA stack.</p>
2. Tunnel kiln equipped with a DIFF or DLS/FF.	a. Each emission limit in Table 1 to this subpart and each operating limit in Item 2 of Table 2 to this subpart for tunnel kilns equipped with DIFF or DLS/FF.	i. If you use a bag leak detection system, initiating corrective action within 1 hour of a bag leak detection system alarm and completing corrective actions in accordance with your OM&M plan; operating and maintaining the fabric filter such that the alarm is not engaged for more than 5 percent of the total operating time in a 6-month block reporting period; in calculating this operating time fraction, if inspection of the fabric filter demonstrates that no corrective action is required, no alarm time is counted; if corrective action is required, each alarm is counted as a minimum of 1 hour; if you take longer than 1 hour to initiate corrective action, the alarm time is counted as the actual amount of time taken by you to initiate corrective action; or performing VE observations of the DIFF or DLS/FF stack at the frequency specified in § 63.8470(e) using Method 22 of 40 CFR part 60, appendix A-7; and maintaining no VE from the DIFF or DLS/FF stack; and

For each...	For the following...	You must demonstrate continuous compliance by...
		<p>ii. Verifying that lime is free-flowing via a load cell, carrier gas/lime flow indicator, carrier gas pressure drop measurement system, or other system; recording all monitor or sensor output, and if lime is found not to be free flowing, promptly initiating and completing corrective actions in accordance with your OM&M plan; recording the feeder setting once during each shift of operation to verify that the feeder setting is being maintained at or above the level established during the HF/HCl/Cl₂ performance test.</p>
<p>3. Tunnel kiln equipped with a WS.</p>	<p>a. Each emission limit in Table 1 to this subpart and each operating limit in Item 3 of Table 2 to this subpart for tunnel kilns equipped with WS.</p>	<p>i. Collecting the scrubber pressure drop data according to § 63.8450(a); reducing the scrubber pressure drop data to 3-hour block averages according to § 63.8450(a); maintaining the average scrubber pressure drop for each 3-hour block period at or above the average pressure drop established during the PM/non-Hg HAP metals performance test; and</p>
		<p>ii. Collecting the scrubber liquid pH data according to § 63.8450(a); reducing the scrubber liquid pH data to 3-hour block averages according to § 63.8450(a); maintaining the average scrubber liquid pH for each 3-hour block period at or above the average scrubber liquid pH established during the HF/HCl/Cl₂ performance test; and</p>
		<p>iii. Collecting the scrubber liquid flow rate data according to § 63.8450(a); reducing the scrubber liquid flow rate data to 3-hour block averages according to § 63.8450(a); maintaining the average scrubber liquid flow rate for each 3-hour block period at or above the highest average scrubber liquid flow rate established during the HF/HCl/Cl₂ and PM/non-Hg HAP metals performance tests; and</p>
		<p>iv. If chemicals are added to the scrubber water, collecting the scrubber chemical feed rate data according to § 63.8450(a); reducing the scrubber chemical feed rate data to 3-hour block averages according to § 63.8450(a); maintaining the average scrubber chemical feed rate for each 3-hour block period at or above the average scrubber chemical feed rate established during the HF/HCl/Cl₂ performance test.</p>

For each...	For the following...	You must demonstrate continuous compliance by...
4. Tunnel kiln equipped with an ACI system.	Each emission limit in Table 1 to this subpart and each operating limit in Item 4 of Table 2 to this subpart for tunnel kilns equipped with ACI system.	Collecting the carbon flow rate data according to § 63.8450(a); reducing the carbon flow rate data to 3-hour block averages according to § 63.8450(a); maintaining the average carbon flow rate for each 3-hour block period at or above the average carbon flow rate established during the Hg performance test.
5. Tunnel kiln with no add-on control	a. Each emission limit in Table 1 to this subpart and each operating limit in Item 5 of Table 2 to this subpart for tunnel kilns with no add-on control.	i. Performing VE observations of the stack at the frequency specified in § 63.8470(e) using Method 22 of 40 CFR part 60, appendix A-7; and maintaining no VE from the stack.
		ii. If your last calculated total facility maximum potential HCl-equivalent was not at or below the health-based standard in Table 1 to this subpart, collecting the kiln process rate data according to § 63.8450(a); reducing the kiln process rate data to 3-hour block averages according to § 63.8450(a); maintaining the average kiln process rate for each 3-hour block period at or below the kiln process rate determined according to § 63.8445(g)(1).
6. Periodic kiln	a. Minimize HAP emissions.	i. Using a designed firing time and temperature cycle for each product produced in the periodic kiln; and
		ii. For each firing load, documenting the total tonnage of product placed in the kiln to ensure that it is not greater than the maximum load identified in Item 1.a.ii of Table 3 to this subpart; and
		iii. Following maintenance procedures for each kiln that, at a minimum, specify the frequency of inspection and maintenance of temperature monitoring devices, controls that regulate air-to-fuel ratios, and controls that regulate firing cycles; and
		iv. Developing and maintaining records for each periodic kiln, as specified in § 63.8490.

For each...	For the following...	You must demonstrate continuous compliance by...
7. Tunnel kiln	a. Minimize dioxin/furan emissions	i. Maintaining and inspecting the burners and associated combustion controls (as applicable) and tuning the specific burner type to optimize combustion no later than 36 calendar months after the previous tune-up; and
		ii. Maintaining records of burner tune-ups used to demonstrate compliance with the dioxin/furan work practice standard; and
		iii. Submitting a report of most recent tune-up conducted with compliance report.

Table 7 to Subpart JJJJJ of Part 63--Requirements for Reports

As stated in § 63.8485, you must submit each report that applies to you according to the following table.

You must submit...	The report must contain...	You must submit the report...
1. A compliance report.	a. If there are no deviations from any emission limitations (emission limits, operating limits) that apply to you, a statement that there were no deviations from the emission limitations during the reporting period. If there were no periods during which the CMS was out-of-control as specified in your OM&M plan, a statement that there were no periods during which the CMS was out-of-control during the reporting period.	Semiannually according to the requirements in § 63.8485(b) .
	b. If you have a deviation from any emission limitation (emission limit, operating limit) during the reporting period, the report must contain the information in § 63.8485(d) or (e) . If there were periods during which the CMS was out-of-control, as specified in your OM&M plan, the report must contain the information in § 63.8485(e) .	Semiannually according to the requirements in § 63.8485(b) .

Table 8 to Subpart JJJJJ of Part 63--Applicability of General Provisions to Subpart JJJJJ

As stated in § 63.8505, you must comply with the General Provisions in §§ 63.1 through 63.16 that apply to you according to the following table.

Citation	Subject	Brief Description	Applies to Subpart JJJJJ?
§63.1	Applicability.	Initial applicability determination; applicability after standard established; permit requirements; extensions, notifications.	Yes.
§63.2	Definitions.	Definitions for part 63 standards.	Yes.
§63.3	Units and Abbreviations.	Units and abbreviations for part 63 standards.	Yes.
§63.4	Prohibited Activities.	Compliance date; circumvention; severability.	Yes.
§63.5	Construction/ Reconstruction.	Applicability; applications; approvals.	Yes.
§63.6 (a)	Applicability.	General Provisions (GP) apply unless compliance extension; GP apply to area sources that become major.	Yes.
§63.6 (b) (1) through (4)	Compliance Dates for New and Reconstructed sources.	Standards apply at effective date; 3 years after effective date; upon startup; 10 years after construction or reconstruction commences for section 112(f).	Yes.
§63.6 (b) (5)	Notification.	Must notify if commenced construction or reconstruction after proposal.	Yes.
§63.6 (b) (6)	[Reserved] .		No.

Citation	Subject	Brief Description	Applies to Subpart JJJJJ?
§63.6 (b) (7)	Compliance Dates for New and Reconstructed Area Sources That Become Major.	Area sources that become major must comply with major source standards immediately upon becoming major, regardless of whether required to comply when they were area sources.	Yes.
§63.6 (c) (1) and (2)	Compliance Dates for Existing Sources.	Comply according to date in subpart, which must be no later than 3 years after effective date; for section 112(f) standards, comply within 90 days of effective date unless compliance extension.	Yes.
§63.6 (c) (3) and (4)	[Reserved].		No.
§63.6 (c) (5)	Compliance Dates for Existing Area Sources That Become Major.	Area sources that become major must comply with major source standards by date indicated in subpart or by equivalent time period (for example, 3 years).	Yes.
§63.6 (d)	[Reserved].		No.
§63.6 (e) (1) (i)	Operation & Maintenance.	General Duty to minimize emissions.	No. See § 63.8420 (b) for general duty requirement.
§63.6 (e) (1) (ii)	Operation & Maintenance.	Requirement to correct malfunctions ASAP.	No.
§63.6 (e) (1) (iii)	Operation & Maintenance.	Operation and maintenance requirements enforceable independent of emissions limitations.	Yes.
§63.6 (e) (2)	[Reserved].		No.
§63.6 (e) (3)	Startup, Shutdown, and Malfunction Plan (SSMP).	Requirement for startup, shutdown, and malfunction (SSM) and SSMP; content of SSMP.	No.

Citation	Subject	Brief Description	Applies to Subpart JJJJJ?
§63.6(f) (1)	Compliance Except During SSM.	You must comply with emission standards at all times except during SSM.	No.
§63.6(f) (2) and (3)	Methods for Determining Compliance.	Compliance based on performance test, operation and maintenance plans, records, inspection.	Yes.
§63.6(g)	Alternative Standard.	Procedures for getting an alternative standard.	Yes.
§63.6(h)	Opacity/VE Standards.	Requirements for opacity and VE standards.	No, not applicable.
§63.6(i)	Compliance Extension.	Procedures and criteria for Administrator to grant compliance extension.	Yes.
§63.6(j)	Presidential Compliance Exemption.	President may exempt source category.	Yes.
§63.7(a) (1) and (2)	Performance Test Dates.	Dates for conducting initial performance testing and other compliance demonstrations for emission limits and work practice standards; must conduct 180 days after first subject to rule.	Yes.
§63.7(a) (3)	Section 114 Authority.	Administrator may require a performance test under CAA section 114 at any time.	Yes.
§63.7(a) (4)	Notification of Delay in Performance Testing Due To Force Majeure.	Must notify Administrator of delay in performance testing due to force majeure.	Yes.
§63.7(b) (1)	Notification of Performance Test.	Must notify Administrator 60 days before the test.	Yes.
§63.7(b) (2)	Notification of Rescheduling.	Must notify Administrator 5 days before scheduled date of rescheduled date.	Yes.

Citation	Subject	Brief Description	Applies to Subpart JJJJJ?
§63.7(c)	Quality Assurance(QA)/ Test Plan.	Requirements; test plan approval procedures; performance audit requirements; internal and external QA procedures for testing.	Yes.
§63.7(d)	Testing Facilities.	Requirements for testing facilities.	Yes.
§63.7(e) (1)	Conditions for Conducting Performance Tests.	Cannot conduct performance tests during SSM; not a violation to exceed standard during SSM.	No, § 63.8445 specifies requirements.
§63.7(e) (2) and (3)	Conditions for Conducting Performance Tests.	Must conduct according to subpart and EPA test methods unless Administrator approves alternative; must have at least three test runs of at least 1 hour each; compliance is based on arithmetic mean of three runs; conditions when data from an additional test run can be used.	Yes.
§63.7(e) (4)	Testing under Section 114	Administrator's authority to require testing under section 114 of the Act.	Yes.
§63.7(f)	Alternative Test Method.	Procedures by which Administrator can grant approval to use an alternative test method.	Yes.
§63.7(g)	Performance Test Data Analysis.	Must include raw data in performance test report; must submit performance test data 60 days after end of test with the notification of compliance status.	Yes.
§63.7(h)	Waiver of Tests.	Procedures for Administrator to waive performance test.	Yes.

Citation	Subject	Brief Description	Applies to Subpart JJJJJ?
§63.8(a)(1)	Applicability of Monitoring Requirements.	Subject to all monitoring requirements in subpart.	Yes.
§63.8(a)(2)	Performance Specifications.	Performance Specifications in appendix B of 40 CFR part 60 apply.	Yes.
§63.8(a)(3)	[Reserved].		No.
§63.8(a)(4)	Monitoring with Flares.	Requirements for flares in § 63.11 apply.	No, not applicable.
§63.8(b)(1)	Monitoring.	Must conduct monitoring according to standard unless Administrator approves alternative.	Yes.
§63.8(b)(2) and (3)	Multiple Effluents and Multiple Monitoring Systems.	Specific requirements for installing and reporting on monitoring systems.	Yes.
§63.8(c)(1)	Monitoring System Operation and Maintenance.	Maintenance consistent with good air pollution control practices.	Yes.
§63.8(c)(1)(i)	Routine and Predictable SSM.	Reporting requirements for SSM when action is described in SSMP.	No.
§63.8(c)(1)(ii)	SSM not in SSMP.	Reporting requirements for SSM when action is not described in SSMP.	Yes.
§63.8(c)(1)(iii)	Compliance with Operation and Maintenance Requirements.	How Administrator determines if source complying with operation and maintenance requirements.	No.
§63.8(c)(2) and (3)	Monitoring System Installation.	Must install to get representative emission and parameter measurements.	Yes.
§63.8(c)(4)	CMS Requirements.	Requirements for CMS.	No, § 63.8450 specifies requirements.

Citation	Subject	Brief Description	Applies to Subpart JJJJJ?
§63.8(c) (5)	Continuous Opacity Monitoring System (COMS) Minimum Procedures.	COMS minimum procedures.	No, not applicable.
§63.8(c) (6)	CMS Requirements.	Zero and high level calibration check requirements.	Yes.
§63.8(c) (7) and (8)	CMS Requirements.	Out-of-control periods.	Yes.
§63.8(d)	CMS Quality Control.	Requirements for CMS quality control.	Yes.
§63.8(e)	CMS Performance Evaluation.	Requirements for CMS performance evaluation.	Yes.
§63.8(f) (1) through (5)	Alternative Monitoring Method.	Procedures for Administrator to approve alternative monitoring.	Yes.
§63.8(f) (6)	Alternative to Relative Accuracy Test.	Procedures for Administrator to approve alternative relative accuracy test for continuous emissions monitoring systems (CEMS).	No, not applicable.
§63.8(g)	Data Reduction.	COMS and CEMS data reduction requirements.	No, not applicable.
§63.9(a)	Notification Requirements.	Applicability; State delegation.	Yes.
§63.9(b)	Initial Notifications.	Requirements for initial notifications.	Yes.
§63.9(c)	Request for Compliance Extension.	Can request if cannot comply by date or if installed BACT/LAER.	Yes.
§63.9(d)	Notification of Special Compliance Requirements for New Source.	For sources that commence construction between proposal and promulgation and want to comply 3 years after effective date.	Yes.
§63.9(e)	Notification of Performance Test.	Notify Administrator 60 days prior.	Yes.

Citation	Subject	Brief Description	Applies to Subpart JJJJJ?
§63.9(f)	Notification of VE/Opacity Test.	Notify Administrator 30 days prior.	No, not applicable.
§63.9(g) (1)	Additional Notifications When Using CMS.	Notification of performance evaluation.	Yes
§63.9(g) (2) and (3)	Additional Notifications When Using CMS.	Notification of COMS data use; notification that relative accuracy alternative criterion were exceeded.	No, not applicable.
§63.9(h)	Notification of Compliance Status.	Contents; submittal requirements.	Yes.
§63.9(i)	Adjustment of Submittal Deadlines.	Procedures for Administrator to approve change in when notifications must be submitted.	Yes.
§63.9(j)	Change in Previous Information.	Must submit within 15 days after the change.	Yes.
§63.10(a)	Recordkeeping/Reporting.	Applicability; general information.	Yes.
§63.10(b) (1)	General Recordkeeping Requirements.	General requirements.	Yes.
§63.10(b) (2) (i)	Records Related to SSM.	Recordkeeping of occurrence and duration of startups and shutdowns.	No.

Citation	Subject	Brief Description	Applies to Subpart JJJJJ?
§63.10(b)(2)(ii)	Records Related to SSM.	Recordkeeping of failures to meet a standard.	No. See § 63.8490(c)(2) for recordkeeping of (1) date, time and duration; (2) listing of affected source or equipment, and an estimate of the volume of each regulated pollutant emitted over the standard; and (3) actions to minimize emissions and correct the failure.
§63.10(b)(2)(iii)	Records Related to SSM.	Maintenance records.	Yes.
§63.10(b)(2)(iv) and (v)	Records Related to SSM.	Actions taken to minimize emissions during SSM.	No.
§63.10(b)(2)(vi) through (xii) and (xiv)	CMS Records.	Records when CMS is malfunctioning, inoperative or out-of-control.	Yes.
§63.10(b)(2)(xiii)	Records.	Records when using alternative to relative accuracy test.	No, not applicable.
§63.10(b)(3)	Records.	Applicability Determinations.	Yes.
§63.10(c)(1) through (15)	Records.	Additional records for CMS	No, §§ 63.8425 and 63.8490 specify requirements.
§63.10(d)(1) and (2)	General Reporting Requirements.	Requirements for reporting; performance test results reporting.	Yes.
§63.10(d)(3)	Reporting Opacity or VE Observations.	Requirements for reporting opacity and VE.	No, not applicable.

Citation	Subject	Brief Description	Applies to Subpart JJJJJ?
§63.10 (d) (4)	Progress Reports.	Must submit progress reports on schedule if under compliance extension.	Yes.
§63.10 (d) (5)	SSM Reports.	Contents and submission.	No. See § 63.8485(f) for malfunction reporting requirements.
§63.10 (e) (1) through (3)	Additional CMS Reports.	Requirements for CMS reporting.	No, §§ 63.8425 and 63.8485 specify requirements.
§63.10 (e) (4)	Reporting COMS data.	Requirements for reporting COMS data with performance test data.	No, not applicable.
§63.10 (f)	Waiver for Recordkeeping/ Reporting.	Procedures for Administrator to waive.	Yes.
§63.11	Flares.	Requirement for flares.	No, not applicable.
§63.12	Delegation.	State authority to enforce standards.	Yes.
§63.13	Addresses.	Addresses for reports, notifications, requests.	Yes.
§63.14	Incorporation by Reference.	Materials incorporated by reference.	Yes.
§63.15	Availability of Information.	Information availability; confidential information.	Yes.
§63.16	Performance Track Provisions.	Requirements for Performance Track member facilities.	Yes.

4. Subchapter C is amended by revising subpart KKKKK to read as follows:

Subpart KKKKK—NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR CLAY CERAMICS MANUFACTURING

Sec.

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WHAT THIS SUBPART COVERS

§ 63.8530 What is the purpose of this subpart?

This subpart establishes national emission limitations and work practice standards for hazardous air pollutants (HAP) emitted from clay ceramics manufacturing facilities. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and work practice standards.

§ 63.8535 Am I subject to this subpart?

You are subject to this subpart if you own or operate a clay ceramics manufacturing facility that is, is located at, or is part of a major source of HAP emissions according to the criteria in paragraphs (a) and (b) of this section.

(a) A clay ceramics manufacturing facility is a plant site that manufactures pressed floor tile, pressed wall tile, other pressed tile, or sanitaryware (e.g., sinks and toilets). Clay ceramics manufacturing facilities typically process clay, shale, and various additives; form the processed materials into tile or sanitaryware shapes; and dry and fire the ceramic products. Glazes are applied to many tile and sanitaryware products.

(b) A major source of HAP emissions is any stationary source or group of stationary sources within a contiguous area under common control that emits or has the potential to emit any single HAP at a rate of 9.07 megagrams (10 tons) or more per year or any combination of HAP at a rate of 22.68 megagrams (25 tons) or more per year.

§ 63.8540 What parts of my plant does this subpart cover?

(a) This subpart applies to each existing, new, or reconstructed affected source at a clay ceramics manufacturing facility.

(b) Each existing, new, or reconstructed ceramic tile roller kiln, sanitaryware tunnel kiln, sanitaryware shuttle kiln, ceramic tile glaze line using glaze spraying, sanitaryware glaze spray booth, ceramic tile spray dryer, and floor tile press dryer is an affected source.

(c) Process units not subject to the requirements of this subpart are listed in paragraphs (c)(1) through (6) of this section.

(1) Kilns that are used exclusively for refiring.

(2) Kilns that are used exclusively for setting glazes on previously fired products.

(3) Glaze spray operations that use wet glazes containing less than 0.1 (weight) percent metal HAP (dry basis).

(4) Raw material processing and handling.

(5) Wall tile press dryers.

(6) Sanitaryware ware dryers.

(d) A source is a new affected source if construction of the affected source began after **[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, and you met the applicability criteria at the time you began construction.

(e) An affected source is reconstructed if you meet the criteria as defined in § 63.2.

(f) An affected source is existing if it is not new or reconstructed.

§ 63.8545 When do I have to comply with this subpart?

(a) If you have a new or reconstructed affected source, you must comply with this subpart according to paragraphs (a)(1) and (2) of this section.

(1) If the initial startup of your affected source is after **[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]** but before [DATE 60 DAYS AFTER THE DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER], then you must comply with the applicable emission limitations and work practice standards in Tables 1, 2, and 3 to this subpart no later than [DATE 60 DAYS AFTER THE DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER].

(2) If the initial startup of your affected source is after [DATE 60 DAYS AFTER THE DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER], then you must comply with the applicable emission limitations and work practice standards in Tables 1, 2, and 3 to this subpart upon initial startup of your affected source.

(b) If you have an existing affected source, you must comply with the emission limitations and work practice standards for existing sources in Tables 1, 2, and 3 to this subpart no later than [DATE 3 YEARS AND 60 DAYS AFTER THE DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER].

(c) If you have an existing area source that increases its emissions or its potential to emit such that it becomes a major source of HAP by adding a new affected source or by reconstructing, you must be in compliance with this subpart upon initial startup of your affected source as a major source.

(d) If you have a new area source (i.e., an area source for which construction or reconstruction was commenced after **[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]**) that increases its emissions or its potential to emit such that it becomes a major source of HAP, you must be in compliance with this subpart upon initial startup of your affected source as a major source.

(e) You must meet the notification requirements in § 63.8630 according to the schedule in § 63.8630 and in subpart A of this part. Some of the notifications must be submitted before you are required to comply with the emission limitations in this subpart.

EMISSION LIMITATIONS AND WORK PRACTICE STANDARDS

§ 63.8555 What emission limitations and work practice standards must I meet?

(a) You must meet each emission limit in Table 1 to this subpart that applies to you.

(b) You must meet each operating limit in Table 2 to this subpart that applies to you.

(c) You must meet each work practice standard in Table 3 to this subpart that applies to you.

§ 63.8560 What are my options for meeting the emission limitations and work practice standards?

(a) To meet the emission limitations in Tables 1 and 2 to this subpart, you must use one or more of the options listed in paragraphs (a)(1) and (2) of this section.

(1) Emissions control system. Use an emissions capture and collection system and an air pollution control device (APCD) and demonstrate that the resulting emissions meet the emission limits in Table 1 to this subpart, and that the capture and collection system and APCD meet the applicable operating limits in Table 2 to this subpart.

(2) Process changes. Use low-HAP raw materials or implement manufacturing process changes and demonstrate that the resulting emissions or emissions reductions meet the emission limits in Table 1 to this subpart.

(b) To meet the work practice standards for affected sanitaryware shuttle kilns, you must comply with the requirements listed in Table 3 to this subpart.

(c) To meet the work practice standards for affected sources during periods of startup and shutdown, you must comply with the requirements listed in Table 3 to this subpart.

GENERAL COMPLIANCE REQUIREMENTS

§ 63.8570 What are my general requirements for complying with this subpart?

(a) You must be in compliance with the emission limitations (including operating limits) in this subpart at all times, except during periods of routine control device maintenance as specified in paragraph (d) of this section.

(b) Except as specified in paragraph (d) of this section, you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by the applicable standard have been achieved. Determination of whether a source is operating in compliance with operation and maintenance requirements will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. During the period between the compliance date specified for your affected source in § 63.8545 and the date upon which continuous monitoring systems (CMS)

(e.g., continuous parameter monitoring systems) have been installed and verified and any applicable operating limits have been set, you must maintain a log detailing the operation and maintenance of the process and emissions control equipment.

(c) For each affected source that is subject to the emission limits specified in Table 1 to this subpart, you must prepare and implement a written operation, maintenance, and monitoring (OM&M) plan according to the requirements in § 63.8575.

(d) If you own or operate an affected source that is subject to the emission limits specified in Table 1 to this subpart and must perform routine maintenance on the control device for that affected source, you may bypass the source control device and continue operating the affected source upon approval by the Administrator provided you satisfy the conditions listed in paragraphs (d)(1) through (5) of this section.

(1) You must request a routine control device maintenance exemption from the Administrator. Your request must justify the need for the routine maintenance on the control device and the time required to accomplish the maintenance activities, describe the maintenance activities and the frequency of the maintenance activities, explain why the maintenance cannot be accomplished

during source shutdowns, describe how you plan to minimize emissions to the greatest extent possible during the maintenance, and provide any other documentation required by the Administrator.

(2) The routine control device maintenance exemption must not exceed 4 percent of the annual operating uptime for each affected source.

(3) The request for the routine control device maintenance exemption, if approved by the Administrator, must be incorporated by reference in and attached to the affected source's title V permit.

(4) You must minimize HAP emissions during the period when the affected source is operating and the control device is offline.

(5) You must minimize the time period during which the affected source is operating and the control device is offline.

(e) If you own or operate an affected kiln that is subject to the work practice standard specified in Table 3 to this subpart, you must be in compliance with that work practice standard at all times, except during periods of natural gas curtailment or other periods when natural gas is not available.

(f) You must be in compliance with the provisions of subpart A of this part, except as noted in Table 9 to this subpart.

§ 63.8575 What do I need to know about operation, maintenance, and monitoring plans?

(a) For each affected source that is subject to the emission limits specified in Table 1 to this subpart, you must prepare, implement, and revise as necessary an OM&M plan that includes the information in paragraph (b) of this section. Your OM&M plan must be available for inspection by the permitting authority upon request.

(b) Your OM&M plan must include, as a minimum, the information in paragraphs (b)(1) through (13) of this section.

(1) Each process and APCD to be monitored, the type of monitoring device that will be used, and the operating parameters that will be monitored.

(2) A monitoring schedule that specifies the frequency that the parameter values will be determined and recorded.

(3) The limits for each parameter that represent continuous compliance with the emission limitations in § 63.8555. The limits must be based on values of the monitored parameters recorded during performance tests.

(4) Procedures for the proper operation and routine and long-term maintenance of each APCD, including a maintenance and inspection schedule that is consistent with the manufacturer's recommendations.

(5) Procedures for installing the CMS sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (e.g., on or downstream of the last APCD).

(6) Performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer, and the data collection and reduction system.

(7) Continuous monitoring system performance evaluation procedures and acceptance criteria (e.g., calibrations).

(8) Procedures for the proper operation and maintenance of monitoring equipment consistent with the requirements in §§ 63.8600 and 63.8(c)(1), (3), (7), and (8).

(9) Continuous monitoring system data quality assurance procedures consistent with the requirements in § 63.8(d).

(10) Continuous monitoring system recordkeeping and reporting procedures consistent with the requirements in §§ 63.8635 and 63.8640.

(11) Procedures for responding to operating parameter deviations, including the procedures in paragraphs (b)(11)(i) through (iii) of this section.

(i) Procedures for determining the cause of the operating parameter deviation.

(ii) Actions necessary for correcting the deviation and returning the operating parameters to the allowable limits.

(iii) Procedures for recording the times that the deviation began and ended, and corrective actions were initiated and completed.

(12) Procedures for keeping records to document compliance.

(13) If you operate an affected source and you plan to take the source control device out of service for routine maintenance, as specified in § 63.8570(d), the procedures specified in paragraphs (b)(13)(i) and (ii) of this section.

(i) Procedures for minimizing HAP emissions from the affected source during periods of routine maintenance of the source control device when the affected source is operating and the control device is offline.

(ii) Procedures for minimizing the duration of any period of routine maintenance on the source control device when the affected source is operating and the control device is offline.

(c) Changes to the operating limits in your OM&M plan require a new performance test. If you are revising an operating limit parameter value, you must meet the requirements in paragraphs (c)(1) and (2) of this section.

(1) Submit a notification of performance test to the Administrator as specified in § 63.7(b).

(2) After completing the performance test to demonstrate that compliance with the emission limits can be achieved at the revised operating limit parameter value, you must submit the performance test results and the revised operating limits as part of the Notification of Compliance Status required under § 63.9(h).

(d) If you are revising the inspection and maintenance procedures in your OM&M plan, you do not need to conduct a new performance test.

TESTING AND INITIAL COMPLIANCE REQUIREMENTS

§ 63.8585 By what date must I conduct performance tests?

For each affected source that is subject to the emission limits specified in Table 1 to this subpart, you must conduct performance tests within 180 calendar days after the compliance date that is specified for your source in § 63.8545 and according to the provisions in § 63.7(a)(2).

§ 63.8590 When must I conduct subsequent performance tests?

(a) For each affected source that is subject to the emission limits specified in Table 1 to this subpart, you must conduct a performance test before renewing your 40 CFR part 70 operating permit or at least every 5 years following the initial performance test.

(b) You must conduct a performance test when you want to change the parameter value for any operating limit specified in your OM&M plan.

§ 63.8595 How do I conduct performance tests and establish operating limits?

(a) You must conduct each performance test in Table 4 to this subpart that applies to you.

(b) Before conducting the performance test, you must install and calibrate all monitoring equipment.

(c) Each performance test must be conducted according to the requirements in § 63.7 and under the specific conditions in Table 4 to this subpart.

(d) Performance tests shall be conducted under such conditions as the Administrator specifies to the owner or operator based on representative performance of the affected source for the period being tested. Representative conditions exclude periods of startup and shutdown. The owner or operator

may not conduct performance tests during periods of malfunction. The owner or operator must record the process information that is necessary to document operating conditions during the test and include in such record an explanation to support that such conditions represent normal operation. Upon request, the owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of performance tests.

(e) You must conduct at least three separate test runs for each performance test required in this section, as specified in § 63.7(e)(3). Each test run must last at least 1 hour.

(f) You must use the data gathered during the performance test and the equations in paragraphs (f)(1) through (4) of this section to determine compliance with the emission limitations.

(1) To determine compliance with the production-based particulate matter (PM) and mercury (Hg) emission limits for ceramic tile roller kilns and sanitaryware tunnel kilns in Table 1 to this subpart, you must calculate your mass emissions per unit of production for each test run using Equation 1 of this section:

$$MP = \frac{ER}{P} \quad (\text{Eq. 1})$$

Where:

MP = mass per unit of production, kilograms (pounds) of

pollutant per megagram (ton) of fired product

ER = mass emission rate of pollutant (PM or Hg) during each performance test run, kilograms (pounds) per hour

P = production rate during each performance test run, megagrams (tons) of fired product per hour.

(2) To determine compliance with the PM emission limits for ceramic tile glaze lines with glaze spraying and sanitaryware glaze spray booths in Table 1 to this subpart, you must calculate your mass emissions per unit of glaze sprayed for each test run using Equation 2 of this section:

$$MG = \frac{ER}{G} \quad (\text{Eq. 2})$$

Where:

MG = mass per unit of glaze application, kilograms (pounds) of PM per megagram (ton) of glaze sprayed

ER = mass emission rate of PM during each performance test run, kilograms (pounds) per hour

G = glaze application rate during each performance test run, megagrams (tons) of glaze sprayed per hour.

(3) To determine compliance with the dioxin/furan emission limits for tunnel and roller kilns, ceramic tile spray dryers, and floor tile press dryers in Table 1 to this subpart, you must calculate the sum of the 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) toxic equivalents (TEQs) for each test run using Equation 3 of this section:

$$TEQ = \sum_{i=1}^n (C_i \times TEF_i) \quad (\text{Eq. 3})$$

Where:

TEQ = sum of the 2,3,7,8-TCDD TEQs, nanograms per dry standard cubic meter

C_i = concentration of dioxin or furan congener i , nanograms per dry standard cubic meter

TEF_i = 2,3,7,8-TCDD toxic equivalency factor (TEF) for congener i , as provided in Table 5 to this subpart.

n = number of congeners included in TEQ

(4) To determine compliance with the health-based standard for acid gas HAP for clay ceramics manufacturing facilities in Table 1 to this subpart, you must:

(i) Calculate the HCl-equivalent emissions for HF and HCl for each tunnel or roller kiln at your facility using Equation 4 of this section:

$$E_i = E_{HCl} + \left[E_{HF} \left(\frac{RfC_{HCl}}{RfC_{HF}} \right) \right] \quad (\text{Eq. 4})$$

Where:

E_i = HCl-equivalent emissions for kiln i , kilograms (pounds) per hour

E_{HCl} = emissions of HCl, kilograms (pounds) per hour

E_{HF} = emissions of HF, kilograms (pounds) per hour

RfC_{HCl} = reference concentration for HCl, 20 micrograms per cubic meter

RfC_{HF} = reference concentration for HF, 14 micrograms per cubic meter

(ii) If you have multiple tunnel or roller kilns at your facility, sum the HCl-equivalent values for all tunnel or roller kilns at the facility using Equation 5 of this section:

$$E_{total} = \sum_{i=1}^n E_i \quad (\text{Eq. 5})$$

Where:

E_{total} = HCl-equivalent emissions for total of all kilns at facility, kilograms (pounds) per hour

E_i = HCl-equivalent emissions for kiln i, kilograms (pounds) per hour

n = number of tunnel kilns at facility

(iii) Compare this value to the health-based standard in Table 1 to this subpart.

(g) You must establish each site-specific operating limit in Table 2 to this subpart that applies to you as specified in paragraph (g)(1) of this section and in Table 4 to this subpart.

(1)(i) If you do not have an APCD installed on your tunnel or roller kiln, you must calculate the maximum potential HCl-equivalent emissions for HF and HCl for each tunnel or roller kiln at your facility using Equation 6 of this section:

$$E_{maxi} = (Cap_i) \left[(MP_{iHCl}) + (MP_{iHF}) \left(\frac{RfC_{HCl}}{RfC_{HF}} \right) \right] \quad (\text{Eq. 6})$$

Where:

$E_{max i}$ = maximum potential HCl-equivalent emissions for kiln i, kilograms (pounds) per hour

Cap_i = design capacity for kiln i, megagrams (tons) of fired product per hour

MP_{iHCl} = mass of HCl per unit of production for kiln i, kilograms (pounds) of HCl per megagram (ton) of fired product

MP_{iHF} = mass of HF per unit of production for kiln i, kilograms (pounds) of HF per megagram (ton) of fired product

RfC_{HCl} = reference concentration for HCl, 20 micrograms per cubic meter

RfC_{HF} = reference concentration for HF, 14 micrograms per cubic meter

(ii) If you have multiple tunnel or roller kilns at your facility, sum the maximum potential HCl-equivalent values for all tunnel or roller kilns at the facility using Equation 7 of this section:

$$E_{\max total} = \sum_{i=1}^n E_{\max i} \quad (\text{Eq. 7})$$

Where:

$E_{\max total}$ = maximum potential HCl-equivalent emissions for total of all kilns at facility, kilograms (pounds) per hour

$E_{\max i}$ = maximum potential HCl-equivalent emissions for kiln i, kilograms (pounds) per hour

n = number of kilns at facility

(iii) If you have a single tunnel or roller kiln at your facility and the total facility maximum potential HCl-equivalent emissions ($E_{\max total}$) are greater than the HCl-equivalent limit in Table 1 to this subpart, you must determine the maximum process rate for the kiln using Equation 8 that would ensure the total

facility maximum potential HCl-equivalent emissions remain at or below the HCl-equivalent limit. The maximum process rate would become your operating limit for process rate and must be included in your OM&M plan.

$$P_{\max i} = \frac{HCl - eq}{\left[(MP_{iHCl}) + (MP_{iHF}) \left(\frac{RfC_{HCl}}{RfC_{HF}} \right) \right]} \quad (\text{Eq. 8})$$

Where:

$P_{\max i}$ = maximum process rate for kiln i, megagrams (tons) per hour

HCl-eq = HCl-equivalent limit in Table 1 to this subpart, 62 kilograms (140 pounds) per hour

MP_{iHCl} = mass of HCl per unit of production for kiln i, kilograms (pounds) of HCl per megagram (ton) of fired product

MP_{iHF} = mass of HF per unit of production for kiln i, kilograms (pounds) of HF per megagram (ton) of fired product

RfC_{HCl} = reference concentration for HCl, 20 micrograms per cubic meter

RfC_{HF} = reference concentration for HF, 14 micrograms per cubic meter

(iv) If you have multiple tunnel or roller kilns at your facility and the total facility maximum potential HCl-equivalent emissions ($E_{\max \text{ total}}$) are greater than the HCl-equivalent limit in Table 1 to this subpart, you must determine the combination of maximum process rates that would ensure that total facility maximum potential HCl-equivalent remains at or below the HCl-

equivalent limit. The maximum process rates would become your operating limits for process rate and must be included in your OM&M plan.

(h) For each affected source that is subject to the emission limits specified in Table 1 to this subpart and is equipped with an APCD that is not addressed in Table 2 to this subpart or that is using process changes as a means of meeting the emission limits in Table 1 to this subpart, you must meet the requirements in § 63.8(f) and paragraphs (h)(1) and (2) of this section.

(1) Submit a request for approval of alternative monitoring procedures to the Administrator no later than the notification of intent to conduct a performance test. The request must contain the information specified in paragraphs (h)(1)(i) through (iv) of this section.

(i) A description of the alternative APCD or process changes.

(ii) The type of monitoring device or procedure that will be used.

(iii) The operating parameters that will be monitored.

(iv) The frequency that the operating parameter values will be determined and recorded to establish continuous compliance with the operating limits.

(2) Establish site-specific operating limits during the performance test based on the information included in the approved alternative monitoring procedures request and, as applicable, as specified in Table 4 to this subpart.

§ 63.8600 What are my monitoring installation, operation, and maintenance requirements?

(a) You must install, operate, and maintain each CMS according to your OM&M plan and the requirements in paragraphs (a)(1) through (5) of this section.

(1) Conduct a performance evaluation of each CMS according to your OM&M plan.

(2) The CMS must complete a minimum of one cycle of operation for each successive 15-minute period. To have a valid hour of data, you must have at least three of four equally spaced data values (or at least 75 percent if you collect more than four data values per hour) for that hour (not including startup, shutdown, malfunction, out-of-control periods, or periods of routine control device maintenance covered by a routine control device maintenance exemption as specified in § 63.8570(d)).

(3) Determine and record the 3-hour block averages of all recorded readings, calculated after every 3 hours of operation as the average of the previous 3 operating hours. To calculate

the average for each 3-hour average period, you must have at least 75 percent of the recorded readings for that period (not including startup, shutdown, malfunction, out-of-control periods, or periods of routine control device maintenance covered by a routine control device maintenance exemption as specified in § 63.8570(d)).

(4) Record the results of each inspection, calibration, and validation check.

(5) At all times, maintain the monitoring equipment including, but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment.

(b) For each liquid flow measurement device, you must meet the requirements in paragraphs (a)(1) through (5) and paragraphs (b)(1) through (3) of this section.

(1) Locate the flow sensor in a position that provides a representative flowrate.

(2) Use a flow sensor with a minimum measurement sensitivity of 2 percent of the liquid flowrate.

(3) At least semiannually, conduct a flow sensor calibration check.

(c) For each pressure measurement device, you must meet the requirements in paragraphs (a)(1) through (5) and (c)(1) through (7) of this section.

(1) Locate the pressure sensor(s) in or as close to a position that provides a representative measurement of the pressure.

(2) Minimize or eliminate pulsating pressure, vibration, and internal and external corrosion.

(3) Use a gauge with a minimum measurement sensitivity of 0.5 inch of water or a transducer with a minimum measurement sensitivity of 1 percent of the pressure range.

(4) Check the pressure tap daily to ensure that it is not plugged.

(5) Using a manometer, check gauge calibration quarterly and transducer calibration monthly.

(6) Any time the sensor exceeds the manufacturer's specified maximum operating pressure range, conduct calibration checks or install a new pressure sensor.

(7) At least monthly, inspect all components for integrity, all electrical connections for continuity, and all mechanical connections for leakage.

(d) For each pH measurement device, you must meet the requirements in paragraphs (a) (1) through (5) and (d) (1) through (4) of this section.

(1) Locate the pH sensor in a position that provides a representative measurement of pH.

(2) Ensure the sample is properly mixed and representative of the fluid to be measured.

(3) Check the pH meter's calibration on at least two points every 8 hours of process operation.

(4) At least monthly, inspect all components for integrity and all electrical connections for continuity.

(e) For each bag leak detection system, you must meet the requirements in paragraphs (e)(1) through (11) of this section.

(1) Each triboelectric bag leak detection system must be installed, calibrated, operated, and maintained according to the "Fabric Filter Bag Leak Detection Guidance," (EPA-454/R-98-015, September 1997) (incorporated by reference, see § 63.14). Other types of bag leak detection systems must be installed, operated, calibrated, and maintained in a manner consistent with the manufacturer's written specifications and recommendations.

(2) The bag leak detection system must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less.

(3) The bag leak detection system sensor must provide an output of relative PM loadings.

(4) The bag leak detection system must be equipped with a device to continuously record the output signal from the sensor.

(5) The bag leak detection system must be equipped with an audible alarm system that will sound automatically when an increase in relative PM emissions over a preset level is detected. The alarm must be located where it is easily heard by plant operating personnel.

(6) For positive pressure fabric filter systems, a bag leak detector must be installed in each baghouse compartment or cell.

(7) For negative pressure or induced air fabric filters, the bag leak detector must be installed downstream of the fabric filter.

(8) Where multiple detectors are required, the system's instrumentation and alarm may be shared among detectors.

(9) The baseline output must be established by adjusting the range and the averaging period of the device and establishing the alarm set points and the alarm delay time according to section 5.0 of the "Fabric Filter Bag Leak Detection Guidance," (EPA-454/R-98-015, September 1997) (incorporated by reference, see § 63.14).

(10) Following initial adjustment of the system, the sensitivity or range, averaging period, alarm set points, or alarm delay time may not be adjusted except as detailed in your OM&M plan. In no case may the sensitivity be increased by more than 100 percent or decreased more than 50 percent over a 365-

day period unless such adjustment follows a complete fabric filter inspection which demonstrates that the fabric filter is in good operating condition, as defined in section 5.2 of the "Fabric Filter Bag Leak Detection Guidance," (EPA-454/R-98-015, September 1997) (incorporated by reference, see § 63.14). Record each adjustment.

(11) Record the results of each inspection, calibration, and validation check.

(f) For each lime, chemical, or carbon feed rate measurement device, you must meet the requirements in paragraphs (a)(1) through (5) and (f)(1) and (2) of this section.

(1) Locate the measurement device in a position that provides a representative feed rate measurement.

(2) At least semiannually, conduct a calibration check.

(g) For each temperature measurement device, you must meet the requirements in paragraphs (a)(1) through (5) and (g)(1) through (3) of this section.

(1) Locate the measurement device in a position that provides a representative temperature.

(2) Use a measurement device with a minimum sensitivity of 1 percent of the temperature being measured.

(3) At least semiannually, conduct a calibration check.

(h) Requests for approval of alternate monitoring procedures must meet the requirements in §§ 63.8595(h) and 63.8(f).

§ 63.8605 How do I demonstrate initial compliance with the emission limitations and work practice standards?

(a) You must demonstrate initial compliance with each emission limitation and work practice standard that applies to you according to Table 6 to this subpart.

(b) You must establish each site-specific operating limit in Table 2 to this subpart that applies to you according to the requirements in § 63.8595 and Table 4 to this subpart.

(c) You must submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in § 63.8630(e).

CONTINUOUS COMPLIANCE REQUIREMENTS

§ 63.8615 How do I monitor and collect data to demonstrate continuous compliance?

(a) You must monitor and collect data according to this section.

(b) Except for periods of monitor malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), you must monitor continuously (or collect

data at all required intervals) at all times that the affected source is operating. This includes periods of startup, shutdown, malfunction, and routine control device maintenance as specified in § 63.8570(d) when the affected source is operating.

(c) You may not use data recorded during monitoring malfunctions, associated repairs, out-of-control periods, or required quality assurance or control activities for purposes of calculating data averages. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions. You must use all the valid data collected during all other periods in assessing compliance. Any averaging period for which you do not have valid monitoring data and such data are required constitutes a deviation from the monitoring requirements.

§ 63.8620 How do I demonstrate continuous compliance with the emission limitations and work practice standards?

(a) You must demonstrate continuous compliance with each emission limit, operating limit, and work practice standard in Tables 1, 2, and 3 to this subpart that applies to you according to the methods specified in Table 7 to this subpart.

(b) For each affected source that is subject to the emission limits specified in Table 1 to this subpart and is equipped with an APCD that is not addressed in Table 2 to this subpart, or that is using process changes as a means of meeting the emission limits in Table 1 to this subpart, you must demonstrate continuous compliance with each emission limit in Table 1 to this subpart, and each operating limit established as required in § 63.8595(h)(2) according to the methods specified in your approved alternative monitoring procedures request, as described in §§ 63.8595(h)(1) and 63.8(f).

(c) You must report each instance in which you did not meet each emission limit and operating limit in this subpart that applies to you. This includes periods of startup, shutdown, malfunction, and routine control device maintenance. These instances are deviations from the emission limitations in this subpart. These deviations must be reported according to the requirements in § 63.8635.

(d) Deviations that occur during periods of control device maintenance covered by an approved routine control device maintenance exemption according to § 63.8570(d) are not violations if you demonstrate to the Administrator's satisfaction that you were operating in accordance with the approved routine control device maintenance exemption.

(e) You must demonstrate continuous compliance with the operating limits in Table 2 to this subpart for visible emissions (VE) from tunnel or roller kilns that are uncontrolled or equipped with DIFF, DLS/FF, or other dry control device by monitoring VE at each kiln stack according to the requirements in paragraphs (e)(1) through (3) of this section.

(1) Perform daily VE observations of each kiln stack according to the procedures of Method 22 of 40 CFR part 60, appendix A-7. You must conduct the Method 22 test while the affected source is operating under normal conditions. The duration of each Method 22 test must be at least 15 minutes.

(2) If VE are observed during any daily test conducted using Method 22 of 40 CFR part 60, appendix A-7, you must promptly initiate and complete corrective actions according to your OM&M plan. If no VE are observed in 30 consecutive daily Method 22 tests for any kiln stack, you may decrease the frequency of Method 22 testing from daily to weekly for that kiln stack. If VE are observed during any weekly test, you must promptly initiate and complete corrective actions according to your OM&M plan, resume Method 22 testing of that kiln stack on a daily basis, and maintain that schedule until no VE are observed in 30 consecutive daily tests, at which time you may again decrease the frequency of Method 22 testing to a weekly basis.

(3) If VE are observed during any test conducted using Method 22 of 40 CFR part 60, appendix A-7, you must report these deviations by following the requirements in § 63.8635.

NOTIFICATIONS, REPORTS, AND RECORDS

§ 63.8630 What notifications must I submit and when?

(a) You must submit all of the notifications in §§ 63.7(b) and (c), 63.8(f)(4), and 63.9 (b) through (e), (g)(1), and (h) that apply to you, by the dates specified.

(b) As specified in § 63.9(b)(2), if you start up your affected source before [DATE 60 DAYS AFTER THE DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER], you must submit an Initial Notification not later than 120 calendar days after [DATE 60 DAYS AFTER THE DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER].

(c) As specified in § 63.9(b)(2), if you start up your new or reconstructed affected source or affected source described in § 63.8540(d) or § 63.8540(e) on or after [DATE 60 DAYS AFTER THE DATE OF PUBLICATION OF THE FINAL RULE IN THE FEDERAL REGISTER], you must submit an Initial Notification not later than 120 calendar days after you become subject to this subpart.

(d) If you are required to conduct a performance test, you must submit a written notification of intent to conduct a performance test at least 60 calendar days before the

performance test is scheduled to begin, as required in § 63.7(b)(1).

(e) If you are required to conduct a performance test or other initial compliance demonstration as specified in Tables 4 and 6 to this subpart, you must submit a Notification of Compliance Status as specified in § 63.9(h) and paragraphs (e)(1) through (3) of this section.

(1) For each compliance demonstration that includes a performance test conducted according to the requirements in Table 4 to this subpart, you must submit the Notification of Compliance Status, including the performance test results, before the close of business on the 60th calendar day following the completion of the performance test, according to § 63.10(d)(2).

(2) In addition to the requirements in § 63.9(h)(2)(i), you must include the information in paragraphs (e)(2)(i) and (ii) of this section in your Notification of Compliance Status:

(i) The operating limit parameter values established for each affected source with supporting documentation and a description of the procedure used to establish the values.

(ii) For each APCD that includes a fabric filter, if a bag leak detection system is used, analysis and supporting

documentation demonstrating conformance with EPA guidance and specifications for bag leak detection systems in § 63.8600(e).

(3) For each compliance demonstration required in Table 6 to this subpart that does not include a performance test (i.e., compliance demonstration for the work practice standard), you must submit the Notification of Compliance Status before the close of business on the 30th calendar day following the completion of the compliance demonstration.

(f) If you request a routine control device maintenance exemption according to § 63.8570(d), you must submit your request for the exemption no later than 30 days before the compliance date.

(g) If you own or operate an affected kiln that is subject to the work practice standard specified in Item 1 of Table 3 to this subpart, and you intend to use a fuel other than natural gas or equivalent to fire the affected kiln, you must submit a notification of alternative fuel use within 48 hours of the declaration of a period of natural gas curtailment or supply interruption, as defined in § 63.8665. The notification must include the information specified in paragraphs (g)(1) through (5) of this section.

(1) Company name and address.

(2) Identification of the affected kiln.

(3) Reason you are unable to use natural gas or equivalent fuel, including the date when the natural gas curtailment was declared or the natural gas supply interruption began.

(4) Type of alternative fuel that you intend to use.

(5) Dates when the alternative fuel use is expected to begin and end.

§ 63.8635 What reports must I submit and when?

(a) You must submit each report in Table 8 to this subpart that applies to you.

(b) Unless the Administrator has approved a different schedule for submission of reports under § 63.10(a), you must submit each report by the date in Table 8 to this subpart and as specified in paragraphs (b)(1) through (5) of this section.

(1) The first compliance report must cover the period beginning on the compliance date that is specified for your affected source in § 63.8545 and ending on June 30 or December 31, and lasting at least 6 months, but less than 12 months. For example, if your compliance date is March 1, then the first semiannual reporting period would begin on March 1 and end on December 31.

(2) The first compliance report must be postmarked or delivered no later than July 31 or January 31 for compliance periods ending on June 30 and December 31, respectively.

(3) Each subsequent compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.

(4) Each subsequent compliance report must be postmarked or delivered no later than July 31 or January 31 for compliance periods ending on June 30 and December 31, respectively.

(5) For each affected source that is subject to permitting regulations pursuant to 40 CFR part 70 or 40 CFR part 71, and if the permitting authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), you may submit the first and subsequent compliance reports according to the dates the permitting authority has established instead of according to the dates in paragraphs (b)(1) through (4) of this section.

(c) The compliance report must contain the information in paragraphs (c)(1) through (6) of this section.

(1) Company name and address.

(2) Statement by a responsible official with that official's name, title, and signature, certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.

(3) Date of report and beginning and ending dates of the reporting period.

(4) A description of control device maintenance performed while the control device was offline and the affected source controlled by the control device was operating, including the information specified in paragraphs (c)(4)(i) through (iii) of this section.

(i) The date and time when the control device was shut down and restarted.

(ii) Identification of the affected source that was operating and the number of hours that the affected source operated while the control device was offline.

(iii) A statement of whether or not the control device maintenance was included in your approved routine control device maintenance exemption developed as specified in § 63.8570(d). If the control device maintenance was included in your approved routine control device maintenance exemption, then you must report the information in paragraphs (c)(4)(iii)(A) through (C) of this section.

(A) The total amount of time that the affected source controlled by the control device operated during the current semiannual compliance period and during the previous semiannual compliance period.

(B) The amount of time that each affected source controlled by the control device operated while the control device was offline for maintenance covered under the routine control device maintenance exemption during the current semiannual compliance period and during the previous semiannual compliance period.

(C) Based on the information recorded under paragraphs (c)(4)(iii)(A) and (B) of this section, compute the annual percent of affected source operating uptime during which the control device was offline for routine maintenance using Equation 1 of this section.

$$RM = \frac{DT_p + DT_c}{SU_p + SU_c} (100) \quad (\text{Eq. 1})$$

Where:

- RM = Annual percentage of affected source uptime during which control device was offline for routine control device maintenance
- DT_p = Control device downtime claimed under the routine control device maintenance exemption for the previous semiannual compliance period
- DT_c = Control device downtime claimed under the routine control device maintenance exemption for the current semiannual compliance period
- SU_p = Affected source uptime for the previous semiannual compliance period
- SU_c = Affected source uptime for the current semiannual compliance period

(5) If there are no deviations from any emission limitations (emission limits or operating limits) or work

practice standards that apply to you, the compliance report must contain a statement that there were no deviations from the emission limitations or work practice standards during the reporting period.

(6) If there were no periods during which the CMS was out-of-control as specified in your OM&M plan, the compliance report must contain a statement that there were no periods during which the CMS was out-of-control during the reporting period.

(d) For each deviation from an emission limitation (emission limit or operating limit) that occurs at an affected source where you are not using a CMS to comply with the emission limitations in this subpart, the compliance report must contain the information in paragraphs (c)(1) through (4) and (d)(1) through (3) of this section. This includes periods of startup, shutdown, and routine control device maintenance.

(1) The total operating time of each affected source during the reporting period and identification of the sources for which there was a deviation.

(2) Information on the number, date, time, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.

(3) The applicable operating limit or work practice standard from which you deviated and either the parameter

monitor reading during the deviation or a description of how you deviated from the work practice standard.

(e) For each deviation from an emission limitation (emission limit or operating limit) occurring at an affected source where you are using a CMS to comply with the emission limitations in this subpart, you must include the information in paragraphs (c)(1) through (4) and (e)(1) through (13) of this section. This includes periods of startup, shutdown, and routine control device maintenance.

(1) The total operating time of each affected source during the reporting period and identification of the sources for which there was a deviation.

(2) The date and time that each CMS was inoperative, except for zero (low-level) and high-level checks.

(3) The date, time, and duration that each CMS was out-of-control, including the pertinent information in your OM&M plan.

(4) The date and time that each deviation started and stopped, and whether each deviation occurred during routine control device maintenance covered in your approved routine control device maintenance exemption or during another period, and the cause of each deviation (including unknown cause, if applicable).

(5) An estimate of the quantity of each regulated pollutant emitted over the emission limit during the deviation, and a description of the method used to estimate the emissions.

(6) A description of corrective action taken in response to a deviation.

(7) A summary of the total duration of the deviation during the reporting period and the total duration as a percent of the total source operating time during that reporting period.

(8) A breakdown of the total duration of the deviations during the reporting period into those that are due to startup, shutdown, control equipment problems, process problems, other known causes, and other unknown causes.

(9) A summary of the total duration of CMS downtime during the reporting period and the total duration of CMS downtime as a percent of the total source operating time during that reporting period.

(10) A brief description of the process units.

(11) A brief description of the CMS.

(12) The date of the latest CMS certification or audit.

(13) A description of any changes in CMS, processes, or control equipment since the last reporting period.

(f) If a malfunction occurred during the reporting period, the compliance report must contain the information in paragraphs (c)(1) through (4) and (f)(1) and (2) of this section.

(1) The number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded.

(2) A description of actions taken by an owner or operator during a malfunction of an affected facility to minimize emissions in accordance with § 63.8570(b), including actions taken to correct a malfunction.

(g) If you have obtained a title V operating permit according to 40 CFR part 70 or 40 CFR part 71, you must report all deviations as defined in this subpart in the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A). If you submit a compliance report according to Table 8 to this subpart along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), and the compliance report includes all required information concerning deviations from any emission limitation (including any operating limit), then submitting the compliance report will satisfy any obligation to report the same deviations in the semiannual

monitoring report. However, submitting a compliance report will not otherwise affect any obligation you may have to report deviations from permit requirements to the permitting authority.

(h) If you own or operate an affected kiln that is subject to the work practice standard specified in Item 1 of Table 3 to this subpart, and you use a fuel other than natural gas or equivalent to fire the affected kiln, you must submit a report of alternative fuel use within 10 working days after terminating the use of the alternative fuel. The report must include the information in paragraphs (h)(1) through (6) of this section.

(1) Company name and address.

(2) Identification of the affected kiln.

(3) Reason for using the alternative fuel.

(4) Type of alternative fuel used to fire the affected kiln.

(5) Dates that the use of the alternative fuel started and ended.

(6) Amount of alternative fuel used.

(i) Within 60 days after the date of completing each performance test (as defined in § 63.2) as required by this subpart, you must submit the results of the performance test following the procedures specified in either paragraph (i)(1) or (i)(2) of this section.

(1) For data collected using test methods supported by the EPA's Electronic Reporting Tool (ERT) as listed on the EPA's ERT Web site (<http://www.epa.gov/ttn/chief/ert/index.html>) at the time of the test, you must submit the results of the performance test to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI). (CEDRI can be accessed through the EPA's Central Data Exchange (CDX) (http://cdx.epa.gov/epa_home.asp).) Performance test data must be submitted in a file format generated through the use of the EPA's ERT. Instead of submitting performance test data in a file format generated through the use of the EPA's ERT, you may submit an alternate electronic file format consistent with the extensible markup language (XML) schema listed on the EPA's ERT Web site, once the XML schema is available. If you claim that some of the performance test information being submitted is confidential business information (CBI), you must submit a complete file generated through the use of the EPA's ERT (or an alternate electronic file consistent with the XML schema listed on the EPA's ERT Web site once the XML schema is available), including information claimed to be CBI, on a compact disc, flash drive, or other commonly used electronic storage media to the EPA. The electronic media must be clearly marked as CBI and mailed to U.S. EPA/OAPQS/CORE CBI Office, Attention: Group Leader,

Measurement Policy Group, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same ERT file (or alternate file) with the CBI omitted must be submitted to the EPA via the EPA's CDX as described earlier in this paragraph.

(2) For data collected using test methods that are not supported by the EPA's ERT as listed on the EPA's ERT Web site at the time of the test, you must submit the results of the performance test to the Administrator at the appropriate address listed in § 63.13.

§ 63.8640 What records must I keep?

(a) You must keep the records listed in paragraphs (a)(1) through (3) of this section.

(1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted, according to the requirements in § 63.10(b)(2)(xiv).

(2) Records of performance tests as required in § 63.10(b)(2)(viii).

(3) Records relating to control device maintenance and documentation of your approved routine control device maintenance exemption, if you request such an exemption under § 63.8570(d).

(b) You must keep the records required in Table 7 to this subpart to show continuous compliance with each emission limitation and work practice standard that applies to you.

(c) You must also maintain the records listed in paragraphs (c)(1) through (10) of this section.

(1) For each bag leak detection system, records of each alarm, the time of the alarm, the time corrective action was initiated and completed, and a brief description of the cause of the alarm and the corrective action taken.

(2) For each deviation of an operating limit parameter value, the date, time, and duration of the deviation, a brief explanation of the cause of the deviation, actions taken to minimize emissions in accordance with § 63.8570(b) and the corrective action taken to return the affected unit to its normal or usual manner of operation, and whether the deviation occurred during a period of startup, shutdown, or malfunction. Record and retain a list of the affected sources or equipment, an estimate of the volume of each regulated pollutant emitted over any emission limit and a description of the method used to estimate the emissions.

(3) For each affected source, records of production rates on a fired-product weight basis.

(4) Records for any approved alternative monitoring or test procedures.

(5) Records of maintenance and inspections performed on the APCD.

(6) Current copies of your OM&M plan, including any revisions, with records documenting conformance.

(7) Logs of the information required in paragraphs (c)(7)(i) through (iii) of this section to document proper operation of your sanitaryware shuttle kiln.

(i) Records of the firing time and temperature cycle for each product produced in each sanitaryware shuttle kiln. If all shuttle kilns use the same time and temperature cycles, one copy may be maintained for each kiln. Reference numbers must be assigned to use in log sheets.

(ii) For each sanitaryware shuttle kiln, a log that details the type of product fired in each batch, the corresponding time and temperature protocol reference number, and an indication of whether the appropriate time and temperature cycle was fired.

(iii) For each sanitaryware shuttle kiln, a log of the actual tonnage of product fired in the shuttle kiln and an indication of whether the tonnage was below the maximum tonnage for that specific kiln.

(8) Logs of the maintenance procedures used to demonstrate compliance with the maintenance requirements of the sanitaryware shuttle kiln work practice standard specified in Table 3 to this subpart.

(9) For periods of startup, records of the date, time, and duration of each startup period, logs of the kiln or dryer exhaust temperature at the time the first ceramics were placed in the kiln or dryer, and if applicable, logs of the temperature when the kiln or dryer exhaust stopped bypassing the control device. For periods of shutdown, records of the date, time, and duration of each shutdown period, logs of the kiln or dryer exhaust temperature at the time the last ceramics were placed in the kiln or dryer, and if applicable, logs of the temperature when the kiln or dryer exhaust began bypassing the control device.

(10) For each malfunction, records of the following information:

(i) Records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment.

(ii) Records of actions taken during periods of malfunction to minimize emissions in accordance with § 63.8570(b), including corrective actions to restore malfunctioning process and air

pollution control and monitoring equipment to its normal or usual manner of operation.

§ 63.8645 In what form and for how long must I keep my records?

(a) Your records must be in a form suitable and readily available for expeditious review, according to § 63.10(b)(1).

(b) As specified in § 63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(c) You must keep each record onsite for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to § 63.10(b)(1). You may keep the records offsite for the remaining 3 years.

OTHER REQUIREMENTS AND INFORMATION

§ 63.8655 What parts of the General Provisions apply to me?

Table 9 to this subpart shows which parts of the General Provisions in §§ 63.1 through 63.16 apply to you.

§ 63.8660 Who implements and enforces this subpart?

(a) This subpart can be implemented and enforced by us, the U.S. EPA, or a delegated authority such as your State, local, or tribal agency. If the U.S. EPA Administrator has delegated authority to your State, local, or tribal agency, then that agency, in addition to the U.S. EPA, has the authority to

implement and enforce this subpart. You should contact your U.S. EPA Regional Office to find out if implementation and enforcement of this subpart is delegated to your State, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under subpart E of this part, the authorities contained in paragraph (c) of this section are retained by the Administrator of the U.S. EPA and are not transferred to the State, local, or tribal agency.

(c) The authorities that cannot be delegated to State, local, or tribal agencies are as specified in paragraphs (c)(1) through (5) of this section.

(1) Approval of alternatives to the applicability requirements in §§ 63.8535 and 63.8540, the compliance date requirements in § 63.8545, and the non-opacity emission limitations in § 63.8555.

(2) Approval of major changes to test methods under § 63.7(e)(2)(ii) and (f) and as defined in § 63.90.

(3) Approval of major changes to monitoring under § 63.8(f) and as defined in § 63.90.

(4) Approval of major changes to recordkeeping and reporting under § 63.10(f) and as defined in § 63.90.

(5) Approval of an alternative to any electronic reporting to the EPA required by this subpart.

§ 63.8665 What definitions apply to this subpart?

Terms used in this subpart are defined in the Clean Air Act, in § 63.2, and in this section as follows:

Air pollution control device (APCD) means any equipment that reduces the quantity of a pollutant that is emitted to the air.

Bag leak detection system means an instrument that is capable of monitoring PM loadings in the exhaust of a fabric filter in order to detect bag failures. A bag leak detection system includes, but is not limited to, an instrument that operates on triboelectric, light-scattering, light-transmittance, or other effects to monitor relative PM loadings.

Clay ceramics manufacturing facility means a plant site that manufactures pressed floor tile, pressed wall tile, other pressed tile, or sanitaryware (e.g., sinks and toilets). Clay ceramics manufacturing facilities typically process clay, shale, and various additives, form the processed materials into tile or sanitaryware shapes, and dry and fire the ceramic products. Glazes are applied to many tile and sanitaryware products.

Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

(1) Fails to meet any requirement or obligation established by this subpart including, but not limited to, any emission limitation (including any operating limit) or work practice standard; or

(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart for any affected source required to obtain such a permit.

Dioxin/furan means, for purposes of this subpart, the sum of the 2,3,7,8-TCDD toxic equivalents calculated using Equation 3 of § 63.8595

Dry lime injection fabric filter (DIFF) means an APCD that includes continuous injection of hydrated lime or other sorbent into a duct or reaction chamber followed by a fabric filter.

Dry lime scrubber/fabric filter (DLS/FF) means an APCD that includes continuous injection of humidified hydrated lime or other sorbent into a reaction chamber followed by a fabric filter. These systems typically include recirculation of some of the sorbent.

Emission limitation means any emission limit or operating limit.

Fabric filter means an APCD used to capture PM by filtering a gas stream through filter media; also known as a baghouse.

Glaze means a coating of colored, opaque, or transparent material applied to ceramic products before firing.

Glaze line means a production line for glazing ceramic products, which includes glaze spraying (typically comprised of one or more glaze spray booths) and other types of glazing operations (e.g., dipping, flooding, centrifugal disc glazing, curtain coating).

Glaze spray booth means a type of equipment used for spraying glaze on ceramic products.

Initial startup means the time at which the kiln first reaches a level of production that is equal to 75 percent of the kiln design capacity or 12 months after the affected source begins firing clay ceramics, whichever is earlier.

Kiln design capacity means the maximum amount of clay ceramics, in Mg (tons), that a kiln is designed to produce in one year divided by the number of hours in a year (8,760 hours). If a kiln is modified to increase the capacity, the design capacity is considered to be the capacity following modifications.

Particulate matter (PM) means, for purposes of this subpart, emissions of PM that serve as a measure of total

particulate emissions, as measured by Method 5 (40 CFR part 60, appendix A-3) or Method 29 (40 CFR part 60, appendix A-8), and as a surrogate for metal HAP contained in the particulates including, but not limited to, antimony, arsenic, beryllium, cadmium, chromium, cobalt, lead, manganese, mercury, nickel, and selenium.

Period of natural gas curtailment or supply interruption means a period of time during which the supply of natural gas to an affected facility is halted for reasons beyond the control of the facility. An increase in the cost or unit price of natural gas does not constitute a period of natural gas curtailment or supply interruption.

Plant site means all contiguous or adjoining property that is under common control, including properties that are separated only by a road or other public right-of-way. Common control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, or any combination thereof.

Responsible official means responsible official as defined in 40 CFR 70.2.

Roller kiln means a continuous kiln similar to a tunnel kiln except that the unfired ceramic product travels through the kiln in a single layer on rollers. In the clay ceramics source

category, roller kilns are used at ceramic tile manufacturing plants.

Shuttle kiln means a batch firing kiln that is designed with a removable superstructure that is tilted or raised using hydraulic struts to allow entrance and egress. In the clay ceramics source category, shuttle kilns are used at sanitaryware manufacturing plants.

Spray dryer means a drying chamber used to form a free-flowing powder from a slurry of ceramic mix and water, to improve handling and compaction. In the clay ceramics source category, spray dryers are used at ceramic tile manufacturing plants.

Startup means the setting in operation of an affected source and starting the production process.

Tunnel kiln means any continuous kiln that is not a roller kiln that is used to fire clay ceramics. In the clay ceramics source category, tunnel kilns are used at sanitaryware manufacturing plants.

Wet scrubber (WS) means an APCD that uses water, which may include caustic additives or other chemicals, as the sorbent. Wet scrubbers may use any of various design mechanisms to increase the contact between exhaust gases and the sorbent.

Work practice standard means any design, equipment, work practice, operational standard, or combination thereof, that is promulgated pursuant to section 112(h) of the Clean Air Act.

TABLES TO SUBPART KKKKK OF PART 63

Table 1 to Subpart KKKKK of Part 63--Emission Limits

As stated in § 63.8555, you must meet each emission limit in the following table that applies to you.

For each...	You must meet the following emission limits...
1. Collection of all tunnel or roller kilns at facility	HF and HCl emissions must not exceed 62 kilograms per hour (kg/hr) (140 pounds per hour (lb/hr)) HCl equivalent, under the health-based standard, as determined using Equations 4 and 5 of § 63.8595.
2. Existing floor tile roller kiln.	a. PM emissions must not exceed 0.090 kilogram per megagram (kg/Mg) (0.18 pound per ton (lb/ton)) of fired product.
	b. Hg emissions must not exceed 6.3 E-05 kg/Mg (1.3 E-04 lb/ton) of fired product.
	c. Dioxin/furan emissions must not exceed 4.6 nanograms per dry standard cubic meter (ng/dscm) at 7% O ₂ .
3. Existing wall tile roller kiln	a. PM emissions must not exceed 0.099 kg/Mg (0.20 lb/ton) of fired product.
	b. Hg emissions must not exceed 6.7 E-05 kg/Mg (1.3 E-04 lb/ton) of fired product.
	c. Dioxin/furan emissions must not exceed 0.16 ng/dscm at 7% O ₂ .
4. Existing first-fire sanitaryware tunnel kiln	a. PM emissions must not exceed 0.17 kg/Mg (0.33 lb/ton) of fired product.
	b. Hg emissions must not exceed 1.3 E-04 kg/Mg (2.6 E-04 lb/ton) of fired product.
	c. Dioxin/furan emissions must not exceed 1.5 ng/dscm at 7% O ₂ .
5. Existing tile glaze line with glaze spraying	a. PM emissions must not exceed 0.93 kg/Mg (1.9 lb/ton) of glaze sprayed.
	b. Hg emissions must not exceed 7.9 E-05 kg/Mg (1.6 E-04 lb/ton) of glaze sprayed.

6. Existing sanitaryware manual glaze application	PM emissions must not exceed 16 kg/Mg (33 lb/ton) of glaze sprayed.
7. Existing sanitaryware spray machine glaze application	PM emissions must not exceed 6.2 kg/Mg (12 lb/ton) of glaze sprayed.
8. Existing sanitaryware robot glaze application	PM emissions must not exceed 4.4 kg/Mg (8.8 lb/ton) of glaze sprayed.
9. Existing floor tile spray dryer	Dioxin/furan emissions must not exceed 44 ng/dscm at 7% O ₂ .
10. Existing wall tile spray dryer	Dioxin/furan emissions must not exceed 0.12 ng/dscm at 7% O ₂ .
11. Existing floor tile press dryer	Dioxin/furan emissions must not exceed 0.19 ng/dscm at 7% O ₂ .
12. New or reconstructed floor tile roller kiln	a. PM emissions must not exceed 0.014 kg/Mg (0.027 lb/ton) of fired product.
	b. Hg emissions must not exceed 1.9 E-05 kg/Mg (3.9 E-05 lb/ton) of fired product.
	c. Dioxin/furan emissions must not exceed 1.5 ng/dscm at 7% O ₂ .
13. New or reconstructed wall tile roller kiln	a. PM emissions must not exceed 0.15 kg/Mg (0.27 lb/ton) of fired product.
	b. Hg emissions must not exceed 1.5 E-06 kg/Mg (3.1 E-06 lb/ton) of fired product.
	c. Dioxin/furan emissions must not exceed 0.160.23 ng/dscm at 7% O ₂ .
14. New or reconstructed first-fire sanitaryware tunnel kiln	a. PM emissions must not exceed 0.047 kg/Mg (0.095 lb/ton) of fired product.
	b. Hg emissions must not exceed 6.0 E-05 kg/Mg (1.2 E-04 lb/ton) of fired product.
	c. Dioxin/furan emissions must not exceed 0.37 ng/dscm at 7% O ₂ .
15. New or reconstructed tile glaze line with glaze spraying	a. PM emissions must not exceed 0.30 kg/Mg (0.61 lb/ton) of glaze sprayed.
	b. Hg emissions must not exceed 7.9 E-05 kg/Mg (1.6 E-04 lb/ton) of glaze sprayed.
16. New or reconstructed sanitaryware manual glaze application	PM emissions must not exceed 1.9 kg/Mg (3.8 lb/ton) of glaze sprayed.

17. New or reconstructed sanitaryware spray machine glaze application	PM emissions must not exceed 1.6 kg/Mg (3.2 lb/ton) of glaze sprayed.
18. New or reconstructed sanitaryware robot glaze application	PM emissions must not exceed 1.1 kg/Mg (2.2 lb/ton) of glaze sprayed.
19. New or reconstructed floor tile spray dryer	Dioxin/furan emissions must not exceed 0.17 ng/dscm at 7% O ₂ .
20. New or reconstructed wall tile spray dryer	Dioxin/furan emissions must not exceed 0.12 ng/dscm at 7% O ₂ .
21. New or reconstructed floor tile press dryer	Dioxin/furan emissions must not exceed 0.19 ng/dscm at 7% O ₂ .

Table 2 to Subpart KKKKK of Part 63--Operating Limits

As stated in § 63.8555, you must meet each operating limit in the following table that applies to you.

For each...	You must...
1. Tunnel or roller kiln equipped with a DIFF or DLS/FF.	a. If you use a bag leak detection system, initiate corrective action within 1 hour of a bag leak detection system alarm and complete corrective actions in accordance with your OM&M plan; operate and maintain the fabric filter such that the alarm is not engaged for more than 5 percent of the total operating time in a 6-month block reporting period; or maintain no VE from the DIFF or DLS/FF stack; and
	b. Maintain free-flowing lime in the feed hopper or silo and to the APCD at all times for continuous injection systems; maintain the feeder setting (on a per ton of fired product basis) at or above the level established during the performance test for continuous injection systems.
2. Tunnel or roller kiln equipped with a WS.	a. Maintain the average scrubber pressure drop for each 3-hour block period at or above the average pressure drop established during the PM performance test; and
	b. Maintain the average scrubber liquid pH for each 3-hour block period at or above the average scrubber liquid pH established during the HF/HCl performance test; and
	c. Maintain the average scrubber liquid flow rate for each 3-hour block period at or above the highest average scrubber liquid flow rate established during the HF/HCl and PM performance tests; and

	d. If chemicals are added to the scrubber water, maintain the average scrubber chemical feed rate for each 3-hour block period at or above the average scrubber chemical feed rate established during the HF/HCl performance test.
3. Tunnel or roller kiln equipped with an ACI system.	Maintain the average carbon flow rate for each 3-hour block period at or above the highest average carbon flow rate established during the Hg and dioxin/furan performance tests.
4. Tunnel or roller kiln intending to comply with dioxin/furan emission limit without an ACI system.	If you intend to comply with the dioxin/furan emission limit without an ACI system, maintain the average kiln operating temperature for each 3-hour block period at or above the average temperature established during the dioxin/furan performance test.
5. Tunnel or roller kiln with no add-on control.	a. Maintain no VE from the stack; and
	b. Maintain the kiln process rate at or below the kiln process rate determined according to § 63.8595(g)(1); and
	c. Maintain the average kiln operating temperature for each 3-hour block period at or below the average temperature established during the dioxin/furan performance test.
6. Glaze spray operation equipped with a FF.	If you use a bag leak detection system, initiate corrective action within 1 hour of a bag leak detection system alarm and complete corrective actions in accordance with your OM&M plan; operate and maintain the fabric filter such that the alarm is not engaged for more than 5 percent of the total operating time in a 6-month block reporting period; or maintain no VE from the FF stack; and
7. Glaze spray operation equipped with a WS.	a. Maintain the average scrubber pressure drop for each 3-hour block period at or above the average pressure drop established during the PM performance test; and
	b. Maintain the average scrubber liquid flow rate for each 3-hour block period at or above the average scrubber liquid flow rate established during the PM performance test.
8. Glaze spray operation equipped with a water curtain.	Conduct daily inspections to verify the presence of water flow to the wet control system; and
	Conduct weekly visual inspections of the system ductwork and control equipment for leaks; and
	Conduct annual inspections of the interior of the control equipment (if applicable) to determine the structural integrity and condition of the control equipment.

9. Glaze spray operation equipped with baffles.	Conduct an annual visual inspection of the baffles to confirm the baffles are in place.
10. Spray dryer.	Maintain the average operating temperature for each 3-hour block period at or above the average temperature established during the dioxin/furan performance test.
11. Floor tile press dryer.	Maintain the average operating temperature for each 3-hour block period at or below the average temperature established during the dioxin/furan performance test.

Table 3 to Subpart KKKKK of Part 63--Work Practice Standards

As stated in § 63.8555, you must comply with each work practice standard in the following table that applies to you.

For each...	You must...	According to one of the following requirements...
1. Existing, new, or reconstructed sanitaryware shuttle kiln.	a. Minimize HAP emissions.	i. Use natural gas, or equivalent, as the kiln fuel, except during periods of natural gas curtailment or supply interruption, as defined in § 63.8665; and
		ii. Develop and use a designed firing time and temperature cycle for each product produced in the sanitaryware shuttle kiln. You must either program the time and temperature cycle into your kiln or track each step on a log sheet; and
		iii. Label each sanitaryware shuttle kiln with the maximum load (in tons) of product that can be fired in the kiln during a single firing cycle; and
		iv. For each firing load, document the total tonnage of product placed in the kiln to ensure that it is not greater than the maximum load identified in item 1.a.iii; and
		v. Develop and follow maintenance procedures for each kiln that, at a minimum, specify the frequency of inspection and maintenance of temperature monitoring devices, controls that regulate air-to-fuel ratios, and controls that regulate firing cycles; and
		vi. Develop and maintain records for each sanitaryware shuttle kiln, as specified in § 63.8640.

2. Existing, new or reconstructed kiln or dryer during periods of startup	a. Minimize HAP emissions.	i. Do not put any ceramics into the kiln or dryer until the kiln or dryer exhaust temperature reaches 204 °C (400 °F); and
		ii. If your kiln or dryer has an APCD, begin venting the exhaust from the kiln or dryer through the APCD by the time the kiln or dryer exhaust temperature reaches 204 °C (400 °F).
3. Existing, new or reconstructed kiln or dryer during periods of shutdown	a. Minimize HAP emissions.	i. Do not put any ceramics into the kiln or dryer once the kiln or dryer exhaust temperature falls to 149 °C (300 °F); and
		ii. If your kiln or dryer has an APCD, continue to vent the exhaust from the kiln or dryer through the APCD until the kiln or dryer exhaust temperature falls to 149 °C (300 °F).

Table 4 to Subpart KKKKK of Part 63--Requirements for Performance Tests

As stated in § 63.8595, you must conduct each performance test in the following table that applies to you.

For each...	You must...	Using...	According to the following requirements...
1. Tunnel or roller kiln.	a. Select locations of sampling ports and the number of traverse points.	Method 1 or 1A of 40 CFR part 60, appendix A-1.	Sampling sites must be located at the outlet of the APCD and prior to any releases to the atmosphere for all affected sources.
	b. Determine velocities and volumetric flow rate.	Method 2 of 40 CFR part 60, appendix A-1.	You may use Method 2A, 2C, 2D, or 2F of 40 CFR part 60, appendix A-1, or Method 2G of 40 CFR part 60, appendix A-2, as appropriate, as an alternative to using Method 2 of 40 CFR part 60, appendix A-1.

c. Conduct gas molecular weight analysis.	Method 3 of 40 CFR part 60, appendix A-2.	You may use Method 3A or 3B of 40 CFR part 60, appendix A-2, as appropriate, as an alternative to using Method 3 of 40 CFR part 60, appendix A-2. ANSI/ASME PTC 19.10-1981 [Part 10] (incorporated by reference, see § 63.14) may be used as an alternative to the manual procedures (but not the instrumental procedures) in Methods 3A and 3B.
d. Measure moisture content of the stack gas.	Method 4 of 40 CFR part 60, appendix A-3.	
e. Measure HF and HCl emissions.	i. Method 26A of 40 CFR part 60, appendix A-8; or	You may use Method 26 of 40 CFR part 60, appendix A-8, as an alternative to using Method 26A of 40 CFR part 60, appendix A-8, when no acid PM (<u>e.g.</u> , HF or HCl dissolved in water droplets emitted by sources controlled by a WS) is present. ASTM D6735-01 (Reapproved 2009) (incorporated by reference, see § 63.14) may be used as an alternative to Methods 26 and 26A.

	ii. Method 320 of appendix A of this part.	When using Method 320 of appendix A of this part, you must follow the analyte spiking procedures of section 13 of Method 320 of appendix A of this part, unless you can demonstrate that the complete spiking procedure has been conducted at a similar source. ASTM D6348-03 (Reapproved 2010) (incorporated by reference, see § 63.14) may be used as an alternative to Method 320 if the test plan preparation and implementation in Annexes A1-A8 are mandatory and the %R in Annex A5 is determined for each target analyte.
f. Measure PM emissions.	i. Method 5 of 40 CFR part 60, appendix A-3; or	
	ii. Method 29 of 40 CFR part 60, appendix A-8.	To determine PM, weigh the filter and report the results as PM filterable.
g. Measure Hg emissions.	Method 29 of 40 CFR part 60, appendix A-8.	ASTM D6784-02 (Reapproved 2008) (incorporated by reference, see § 63.14) may be used as an alternative to Method 29 (portion for Hg only).
h. Measure dioxin/furan emissions.	Method 23 of 40 CFR part 60, appendix A-7.	
2. Glaze spray operation	a. Select locations of sampling ports and the number of traverse points.	Method 1 or 1A of 40 CFR part 60, appendix A-1. Sampling sites must be located at the outlet of the APCD and prior to any releases to the atmosphere for all affected sources.

	b. Determine velocities and volumetric flow rate.	Method 2 of 40 CFR part 60, appendix A-1.	You may use Method 2A, 2C, 2D, or 2F of 40 CFR part 60, appendix A-1, or Method 2G of 40 CFR part 60, appendix A-2, as appropriate, as an alternative to using Method 2 of 40 CFR part 60, appendix A-1.
	c. Conduct gas molecular weight analysis.	Method 3 of 40 CFR part 60, appendix A-2.	You may use Method 3A or 3B of 40 CFR part 60, appendix A-2, as appropriate, as an alternative to using Method 3 of 40 CFR part 60, appendix A-2. ANSI/ASME PTC 19.10-1981 [Part 10] (incorporated by reference, see § 63.14) may be used as an alternative to the manual procedures (but not the instrumental procedures) in Methods 3A and 3B.
	d. Measure moisture content of the stack gas.	Method 4 of 40 CFR part 60, appendix A-3.	
	e. Measure PM emissions.	Method 5 of 40 CFR part 60, appendix A-3.	
	f. Measure Hg emissions (tile glaze spray operations only).	Method 29 of 40 CFR part 60, appendix A-8.	ASTM D6784-02 (Reapproved 2008) (incorporated by reference, see § 63.14) may be used as an alternative to Method 29 (portion for Hg only).
3. Spray dryer or floor tile press dryer	a. Select locations of sampling ports and the number of traverse points.	Method 1 or 1A of 40 CFR part 60, appendix A-1.	Sampling sites must be located at the outlet of the APCD and prior to any releases to the atmosphere for all affected sources.
	b. Determine velocities and volumetric flow rate.	Method 2 of 40 CFR part 60, appendix A-1.	You may use Method 2A, 2C, 2D, or 2F of 40 CFR part 60, appendix A-1, or Method 2G of 40 CFR part 60, appendix A-2, as appropriate, as an alternative to using Method 2 of 40 CFR part 60, appendix A-1.

	c. Conduct gas molecular weight analysis.	Method 3 of 40 CFR part 60, appendix A-2.	You may use Method 3A or 3B of 40 CFR part 60, appendix A-2, as appropriate, as an alternative to using Method 3 of 40 CFR part 60, appendix A-2. ANSI/ASME PTC 19.10-1981 [Part 10] (incorporated by reference, see § 63.14) may be used as an alternative to the manual procedures (but not the instrumental procedures) in Methods 3A and 3B.
	d. Measure moisture content of the stack gas.	Method 4 of 40 CFR part 60, appendix A-3.	
	e. Measure dioxin/furan emissions.	Method 23 of 40 CFR part 60, appendix A-7.	
4. Tunnel or roller kiln with no add-on control.	a. Establish the operating limit(s) for kiln process rate if the total facility maximum potential HCl-equivalent emissions are greater than the HCl-equivalent limit in Table 1 to this subpart.	HCl-equivalent limit in Table 1 to this subpart and emissions and production data from the HF/HCl/Cl ₂ performance test.	Using the procedures in § 63.8595(g)(1), you must determine the maximum process rate(s) for your kiln(s) that would ensure total facility maximum potential HCl-equivalent emissions remain at or below the HCl-equivalent limit in Table 1 to this subpart. The maximum process rate(s) would become your site-specific process rate operating limit(s).

	b. Establish the operating limit for kiln operating temperature.	Data from the temperature measurement device during the dioxin/furan performance test.	You must continuously measure the kiln operating temperature, determine and record the block average temperature values for the three test runs, and determine and record the 3-hour block average of the recorded temperature measurements for the three test runs. The average of the three test runs establishes your minimum site-specific operating limit.
5. Tunnel or roller kiln that is complying with PM and/or Hg production-based emission limits.	Determine the production rate during each PM/Hg test run in order to determine compliance with PM and/or Hg production-based emission limits.	Production data collected during the PM/Hg performance tests (<u>e.g.</u> , the number of ceramic pieces and weight per piece in the kiln during a test run divided by the amount of time to fire a piece).	You must measure and record the production rate, on a fired-product weight basis, of the affected kiln for each of the three test runs.
6. Tunnel or roller kiln equipped with a DIFF or DLS/FF.	Establish the operating limit for the lime feeder setting.	Data from the lime feeder during the HF/HCl performance test.	For continuous lime injection systems, you must ensure that lime in the feed hopper or silo and to the APCD is free-flowing at all times during the performance test and record the feeder setting, on a per ton of fired product basis, for the three test runs. If the feed rate setting varies during the three test runs, determine and record the average feed rate from the three test runs. The average of the three test runs establishes your minimum site-specific feed rate operating limit.

7. Tunnel or roller kiln equipped with a WS.

a. Establish the operating limit for the average scrubber pressure drop.	Data from the pressure drop measurement device during the PM performance test.	You must continuously measure the scrubber pressure drop, determine and record the block average pressure drop values for the three test runs, and determine and record the 3-hour block average of the recorded pressure drop measurements for the three test runs. The average of the three test runs establishes your minimum site-specific pressure drop operating limit.
b. Establish the operating limit for the average scrubber liquid pH.	Data from the pH measurement device during the HF/HCl performance test.	You must continuously measure the scrubber liquid pH, determine and record the block average pH values for the three test runs, and determine and record the 3-hour block average of the recorded pH measurements for the three test runs. The average of the three test runs establishes your minimum site-specific liquid pH operating limit.

	c. Establish the operating limit for the average scrubber liquid flow rate.	Data from the flow rate measurement device during the HF/HCl and PM performance tests.	You must continuously measure the scrubber liquid flow rate, determine and record the block average flow rate values for the three test runs, and determine and record the 3-hour block average of the recorded flow rate measurements for the three test runs. The average of the three test runs establishes your minimum site-specific liquid flow rate operating level. If different average wet scrubber liquid flow rate values are measured during the HF/HCl and PM tests, the highest of the average values become your site-specific operating limit.
8. Tunnel or roller kiln equipped with a WS that includes chemical addition to the water.	Establish the operating limit for the average scrubber chemical feed rate.	Data from the chemical feed rate measurement device during the HF/HCl performance test.	You must continuously measure the scrubber chemical feed rate, determine and record the block average chemical feed rate values for the three test runs, and determine and record the 3-hour block average of the recorded chemical feed rate measurements for the three test runs. The average of the three test runs establishes your minimum site-specific chemical addition rate operating limit.

9. Tunnel or roller kiln equipped with an ACI system	Establish the operating limit for the average carbon flow rate.	Data from the carbon flow rate measurement conducted during the Hg performance test.	You must measure the carbon flow rate during each test run, determine and record the block average carbon flow rate values for the three test runs, and determine and record the 3-hour block average of the recorded carbon flow rate measurements for the three test runs. The average of the three test runs establishes your minimum site-specific activated carbon flow rate operating limit.
10. Tunnel or roller kiln intending to comply with dioxin/furan emission limit without an ACI system.	Establish the operating limit for kiln operating temperature.	Data from the temperature measurement device during the dioxin/furan performance test.	You must continuously measure the kiln operating temperature, determine and record the block average temperature values for the three test runs, and determine and record the 3-hour block average of the recorded temperature measurements for the three test runs. The average of the three test runs establishes your minimum site-specific operating limit.
11. Glaze spray operation equipped with a WS.	a. Establish the operating limit for the average scrubber pressure drop.	Data from the pressure drop measurement device during the PM performance test.	You must continuously measure the scrubber pressure drop, determine and record the block average pressure drop values for the three test runs, and determine and record the 3-hour block average of the recorded pressure drop measurements for the three test runs. The average of the three test runs establishes your minimum site-specific pressure drop operating limit.

	b. Establish the operating limit for the average scrubber liquid flow rate.	Data from the flow rate measurement device during the PM performance test.	You must continuously measure the scrubber liquid flow rate, determine and record the block average flow rate values for the three test runs, and determine and record the 3-hour block average of the recorded flow rate measurements for the three test runs. The average of the three test runs establishes your minimum site-specific liquid flow rate operating limit.
12. Spray dryer.	Establish the operating limit for operating temperature.	Data from the temperature measurement device during the dioxin/furan performance test.	You must continuously measure the operating temperature, determine and record the block average temperature values for the three test runs, and determine and record the 3-hour block average of the recorded temperature measurements for the three test runs. The average of the three test runs establishes your minimum site-specific operating limit.
13. Floor tile press dryer.	Establish the operating limit for operating temperature.	Data from the temperature measurement device during the dioxin/furan performance test.	You must continuously measure the operating temperature, determine and record the block average temperature values for the three test runs, and determine and record the 3-hour block average of the recorded temperature measurements for the three test runs. The average of the three test runs establishes your maximum site-specific operating limit.

Table 5 to Subpart KKKKK of Part 63—Toxic Equivalency Factors

As stated in § 63.8595(f)(3), you must demonstrate initial compliance with each dioxin/furan emission limit that applies to you by calculating the sum of the 2,3,7,8-TCDD TEQs using the TEFs in the following table.

For each dioxin/furan congener...	You must calculate its 2,3,7,8-TCDD TEQ using the following TEF...
2,3,7,8-tetrachlorodibenzo-p-dioxin	1
1,2,3,7,8-pentachlorodibenzo-p-dioxin	1
1,2,3,4,7,8-hexachlorodibenzo-p-dioxin	0.1
1,2,3,7,8,9-hexachlorodibenzo-p-dioxin	0.1
1,2,3,6,7,8-hexachlorodibenzo-p-dioxin	0.1
1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin	0.01
Octachlorodibenzo-p-dioxin	0.0003
2,3,7,8-tetrachlorodibenzofuran	0.1
2,3,4,7,8-pentachlorodibenzofuran	0.3
1,2,3,7,8-pentachlorodibenzofuran	0.03
1,2,3,4,7,8-hexachlorodibenzofuran	0.1
1,2,3,6,7,8-hexachlorodibenzofuran	0.1
1,2,3,7,8,9-hexachlorodibenzofuran	0.1
2,3,4,6,7,8-hexachlorodibenzofuran	0.1
1,2,3,4,6,7,8-heptachlorodibenzofuran	0.01
1,2,3,4,7,8,9-heptachlorodibenzofuran	0.01
Octachlorodibenzofuran	0.0003

Table 6 to Subpart KKKKK of Part 63--Initial Compliance with Emission Limitations and Work Practice Standards

As stated in § 63.8605, you must demonstrate initial compliance with each emission limitation and work practice standard that applies to you according to the following table.

For each...	For the following...	You have demonstrated initial compliance if...
1. Collection of all tunnel or roller kilns at the facility.	a. HF, HCl, and Cl ₂ emissions must not exceed 62 kg/hr (140 lb/hr) HCl equivalent.	i. You measure HF and HCl emissions for each kiln using Method 26 or 26A of 40 CFR part 60, appendix A-8 or its alternative, ASTM D6735-01 (Reapproved 2009) (incorporated by reference, see § 63.14); or Method 320 of appendix A of this part or its alternative, ASTM D6348-03 (Reapproved 2010) (incorporated by reference, see § 63.14); and
		ii. You calculate the HCl-equivalent emissions for HF for each kiln using Equation 4 of § 63.8595; and
		iii. You sum the HCl-equivalent values for all kilns at the facility using Equation 5 of § 63.8595; and
		iv. The facility total HCl-equivalent does not exceed 62 kg/hr (140 lb/hr).
2. Existing floor tile roller kiln.	a. PM emissions must not exceed 0.090 kg/Mg (0.18 lb/ton) of fired product.	i. The PM emissions measured using Method 5 of 40 CFR part 60, appendix A-3 or Method 29 of 40 CFR part 60, appendix A-8, over the period of the initial performance test, according to the calculations in § 63.8595(f)(1), do not exceed 0.090 kg/Mg (0.18 lb/ton) of fired product; and
		ii. You establish and have a record of the applicable operating limits listed in Table 2 to this subpart over the 3-hour performance test during which PM emissions did not exceed 0.090 kg/Mg (0.18 lb/ton) of fired product.
	b. Hg emissions must not exceed 6.3 E-05 kg/Mg (1.3 E-04 lb/ton) of fired product.	i. The Hg emissions measured using Method 29 of 40 CFR part 60, appendix A-8 or its alternative, ASTM D6784-02 (Reapproved 2008) (incorporated by reference, see § 63.14), over the period of the initial performance test, do not exceed 6.3 E-05 kg/Mg (1.3 E-04 lb/ton) of fired product; and
		ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which Hg emissions did not exceed 6.3 E-05 kg/Mg (1.3 E-04 lb/ton) of fired product.

3. Existing wall tile roller kiln	c. Dioxin/furan emissions must not exceed 4.6 ng/dscm at 7% O ₂ .	i. The dioxin/furan emissions measured using Method 23 of 40 CFR part 60, appendix A-7, over the period of the initial performance test, do not exceed 4.6 ng/dscm at 7% O ₂ ; and
		ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which dioxin/furan emissions did not exceed 4.6 ng/dscm at 7% O ₂ .
	a. PM emissions must not exceed 0.10 kg/Mg (0.20 lb/ton) of fired product.	i. The PM emissions measured using Method 5 of 40 CFR part 60, appendix A-3 or Method 29 of 40 CFR part 60, appendix A-8, over the period of the initial performance test, according to the calculations in § 63.8595(f)(1), do not exceed 0.10 kg/Mg (0.20 lb/ton) of fired product; and
		ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which PM emissions did not exceed 0.10 kg/Mg (0.20 lb/ton) of fired product.
	b. Hg emissions must not exceed 1.0 E-04 kg/Mg (2.0 E-04 lb/ton) of fired product.	i. The Hg emissions measured using Method 29 of 40 CFR part 60, appendix A-8 or its alternative, ASTM D6784-02 (Reapproved 2008) (incorporated by reference, see § 63.14), over the period of the initial performance test, do not exceed 1.0 E-04 kg/Mg (2.0 E-04 lb/ton) of fired product; and
		ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which Hg emissions did not exceed 1.0 E-04 kg/Mg (2.0 E-04 lb/ton) of fired product.
	c. Dioxin/furan emissions must not exceed 0.17 ng/dscm at 7% O ₂ .	i. The dioxin/furan emissions measured using Method 23 of 40 CFR part 60, appendix A-7, over the period of the initial performance test, do not exceed 0.17 ng/dscm at 7% O ₂ ; and
		ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which dioxin/furan emissions did not exceed 0.17 ng/dscm at 7% O ₂ .

4. Existing first-fire sanitaryware tunnel kiln	a. PM emissions must not exceed 0.17 kg/Mg (0.33 lb/ton) of fired product.	i. The PM emissions measured using Method 5 of 40 CFR part 60, appendix A-3 or Method 29 of 40 CFR part 60, appendix A-8, over the period of the initial performance test, according to the calculations in § 63.8595(f)(1), do not exceed 0.17 kg/Mg (0.33 lb/ton) of fired product; and
		ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which PM emissions did not exceed 0.17 kg/Mg (0.33 lb/ton) of fired product.
	b. Hg emissions must not exceed 1.3 E-04 kg/Mg (2.6 E-04 lb/ton) of fired product.	i. The Hg emissions measured using Method 29 of 40 CFR part 60, appendix A-8 or its alternative, ASTM D6784-02 (Reapproved 2008) (incorporated by reference, see § 63.14), over the period of the initial performance test, do not exceed 1.3 E-04 kg/Mg (2.6 E-04 lb/ton) of fired product; and
		ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which Hg emissions did not exceed 1.3 E-04 kg/Mg (2.6 E-04 lb/ton) of fired product.
	c. Dioxin/furan emissions must not exceed 1.5 ng/dscm at 7% O ₂ .	i. The dioxin/furan emissions measured using Method 23 of 40 CFR part 60, appendix A-7, over the period of the initial performance test, do not exceed 1.5 ng/dscm at 7% O ₂ ; and
		ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which dioxin/furan emissions did not exceed 1.5 ng/dscm at 7% O ₂ .
5. Existing tile glaze line with glaze spraying	a. PM emissions must not exceed 0.93 kg/Mg (1.9 lb/ton) of glaze sprayed.	i. The PM emissions measured using Method 5 of 40 CFR part 60, appendix A-3, over the period of the initial performance test, according to the calculations in § 63.8595(f)(2), do not exceed 0.93 kg/Mg (1.9 lb/ton) of glaze sprayed; and
		ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which PM emissions did not exceed 0.93 kg/Mg (1.9 lb/ton) of glaze sprayed.

	b. Hg emissions must not exceed 7.9 E-05 kg/Mg (1.6 E-04 lb/ton) of glaze sprayed.	<p>i. The Hg emissions measured using Method 29 of 40 CFR part 60, appendix A-8 or its alternative, ASTM D6784-02 (Reapproved 2008) (incorporated by reference, see § 63.14), over the period of the initial performance test, do not exceed 7.9 E-05 kg/Mg (1.6 E-04 lb/ton) of glaze sprayed; and</p> <p>ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which Hg emissions did not exceed 7.9 E-05 kg/Mg (1.6 E-04 lb/ton) of glaze sprayed.</p>
6. Existing sanitaryware manual glaze application	a. PM emissions must not exceed 16 kg/Mg (33 lb/ton) of glaze sprayed.	<p>i. The PM emissions measured using Method 5 of 40 CFR part 60, appendix A-3, over the period of the initial performance test, according to the calculations in § 63.8595(f)(2), do not exceed 16 kg/Mg (33 lb/ton) of glaze sprayed; and</p> <p>ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which PM emissions did not exceed 16 kg/Mg (33 lb/ton) of glaze sprayed.</p>
7. Existing sanitaryware spray machine glaze application	a. PM emissions must not exceed 6.2 kg/Mg (12 lb/ton) of glaze sprayed.	<p>i. The PM emissions measured using Method 5 of 40 CFR part 60, appendix A-3, over the period of the initial performance test, according to the calculations in § 63.8595(f)(2), do not exceed 6.2 kg/Mg (12 lb/ton) of glaze sprayed; and</p> <p>ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which PM emissions did not exceed 6.2 kg/Mg (12 lb/ton) of glaze sprayed.</p>
8. Existing sanitaryware robot glaze application	a. PM emissions must not exceed 4.4 kg/Mg (8.8 lb/ton) of glaze sprayed.	<p>i. The PM emissions measured using Method 5 of 40 CFR part 60, appendix A-3, over the period of the initial performance test, according to the calculations in § 63.8595(f)(2), do not exceed 4.4 kg/Mg (8.8 lb/ton) of glaze sprayed; and</p> <p>ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which PM emissions did not exceed 4.4 kg/Mg (8.8 lb/ton) of glaze sprayed.</p>
9. Existing floor tile spray dryer	a. Dioxin/furan emissions must not exceed 44 ng/dscm at 7% O ₂ .	i. The dioxin/furan emissions measured using Method 23 of 40 CFR part 60, appendix A-7, over the period of the initial performance test, do not exceed 44 ng/dscm at 7% O ₂ ; and

		ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which dioxin/furan emissions did not exceed 44 ng/dscm at 7% O ₂ .
10. Existing wall tile spray dryer	a. Dioxin/furan emissions must not exceed 0.12 ng/dscm at 7% O ₂ .	i. The dioxin/furan emissions measured using Method 23 of 40 CFR part 60, appendix A-7, over the period of the initial performance test, do not exceed 0.12 ng/dscm at 7% O ₂ ; and
		ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which dioxin/furan emissions did not exceed 0.12 ng/dscm at 7% O ₂ .
11. Existing floor tile press dryer	a. Dioxin/furan emissions must not exceed 0.19 ng/dscm at 7% O ₂ .	i. The dioxin/furan emissions measured using Method 23 of 40 CFR part 60, appendix A-7, over the period of the initial performance test, do not exceed 0.19 ng/dscm at 7% O ₂ ; and
		ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which dioxin/furan emissions did not exceed 0.19 ng/dscm at 7% O ₂ .
12. New or reconstructed floor tile roller kiln.	a. PM emissions must not exceed 0.014 kg/Mg (0.027 lb/ton) of fired product.	i. The PM emissions measured using Method 5 of 40 CFR part 60, appendix A-3 or Method 29 of 40 CFR part 60, appendix A-8, over the period of the initial performance test, according to the calculations in § 63.8595(f)(1), do not exceed 0.014 kg/Mg (0.027 lb/ton) of fired product; and
		ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which PM emissions did not exceed 0.014 kg/Mg (0.027 lb/ton) of fired product.
	b. Hg emissions must not exceed 1.9 E-05 kg/Mg (3.9 E-05 lb/ton) of fired product.	i. The Hg emissions measured using Method 29 of 40 CFR part 60, appendix A-8 or its alternative, ASTM D6784-02 (Reapproved 2008) (incorporated by reference, see § 63.14), over the period of the initial performance test, do not exceed 1.9 E-05 kg/Mg (3.9 E-05 lb/ton) of fired product; and

		ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which Hg emissions did not exceed 1.9 E-05 kg/Mg (3.9 E-05 lb/ton) of fired product.
	c. Dioxin/furan emissions must not exceed 1.5 ng/dscm at 7% O ₂ .	<p>i. The dioxin/furan emissions measured using Method 23 of 40 CFR part 60, appendix A-7, over the period of the initial performance test, do not exceed 1.5 ng/dscm at 7% O₂; and</p> <p>ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which dioxin/furan emissions did not exceed 1.5 ng/dscm at 7% O₂.</p>
13. New or reconstructed wall tile roller kiln.	a. PM emissions must not exceed 0.10 kg/Mg (0.20 lb/ton) of fired product.	i. The PM emissions measured using Method 5 of 40 CFR part 60, appendix A-3 or Method 29 of 40 CFR part 60, appendix A-8, over the period of the initial performance test, according to the calculations in § 63.8595(f)(1), do not exceed 0.10 kg/Mg (0.20 lb/ton) of fired product; and
		ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which PM emissions did not exceed 0.10 kg/Mg (0.20 lb/ton) of fired product.
	b. Hg emissions must not exceed 1.0 E-04 kg/Mg (2.0 E-04 lb/ton) of fired product.	i. The Hg emissions measured using Method 29 of 40 CFR part 60, appendix A-8 or its alternative, ASTM D6784-02 (Reapproved 2008) (incorporated by reference, see § 63.14), over the period of the initial performance test, do not exceed 1.0 E-04 kg/Mg (2.0 E-04 lb/ton) of fired product; and
		ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which Hg emissions did not exceed 1.0 E-04 kg/Mg (2.0 E-04 lb/ton) of fired product.
	c. Dioxin/furan emissions must not exceed 0.17 ng/dscm at 7% O ₂ .	i. The dioxin/furan emissions measured using Method 23 of 40 CFR part 60, appendix A-7, over the period of the initial performance test, do not exceed 0.17 ng/dscm at 7% O ₂ ; and

		ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which dioxin/furan emissions did not exceed 0.17 ng/dscm at 7% O ₂ .
14. New or reconstructed first-fire sanitaryware tunnel kiln	a. PM emissions must not exceed 0.047 kg/Mg (0.095 lb/ton) of fired product.	i. The PM emissions measured using Method 5 of 40 CFR part 60, appendix A-3 or Method 29 of 40 CFR part 60, appendix A-8, over the period of the initial performance test, according to the calculations in § 63.8595(f)(1), do not exceed 0.047 kg/Mg (0.095 lb/ton) of fired product; and
		ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which PM emissions did not exceed 0.047 kg/Mg (0.095 lb/ton) of fired product.
	b. Hg emissions must not exceed 6.0 E-05 kg/Mg (1.2 E-04 lb/ton) of fired product.	i. The Hg emissions measured using Method 29 of 40 CFR part 60, appendix A-8 or its alternative, ASTM D6784-02 (Reapproved 2008) (incorporated by reference, see § 63.14), over the period of the initial performance test, do not exceed 6.0 E-05 kg/Mg (1.2 E-04 lb/ton) of fired product; and
		ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which Hg emissions did not exceed 6.0 E-05 kg/Mg (1.2 E-04 lb/ton) of fired product.
	c. Dioxin/furan emissions must not exceed 0.37 ng/dscm at 7% O ₂ .	i. The dioxin/furan emissions measured using Method 23 of 40 CFR part 60, appendix A-7, over the period of the initial performance test, do not exceed 0.37 ng/dscm at 7% O ₂ ; and
		ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which dioxin/furan emissions did not exceed 0.37 ng/dscm at 7% O ₂ .
15. New or reconstructed tile glaze line with glaze spraying	a. PM emissions must not exceed 0.30 kg/Mg (0.61 lb/ton) of glaze sprayed.	i. The PM emissions measured using Method 5 of 40 CFR part 60, appendix A-3, over the period of the initial performance test, according to the calculations in § 63.8595(f)(2), do not exceed 0.30 kg/Mg (0.61 lb/ton) of glaze sprayed; and

		ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which PM emissions did not exceed 0.30 kg/Mg (0.61 lb/ton) of glaze sprayed.
	b. Hg emissions must not exceed 7.9 E-05 kg/Mg (1.6 E-04 lb/ton) of glaze sprayed.	<p>i. The Hg emissions measured using Method 29 of 40 CFR part 60, appendix A-8 or its alternative, ASTM D6784-02 (Reapproved 2008) (incorporated by reference, see § 63.14), over the period of the initial performance test, do not exceed 7.9 E-05 kg/Mg (1.6 E-04 lb/ton) of glaze sprayed; and</p> <p>ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which Hg emissions did not exceed 7.9 E-05 kg/Mg (1.6 E-04 lb/ton) of glaze sprayed.</p>
16. New or reconstructed sanitaryware manual glaze application	a. PM emissions must not exceed 1.9 kg/Mg (3.8 lb/ton) of glaze sprayed.	<p>i. The PM emissions measured using Method 5 of 40 CFR part 60, appendix A-3, over the period of the initial performance test, according to the calculations in § 63.8595(f) (2), do not exceed 1.9 kg/Mg (3.8 lb/ton) of glaze sprayed; and</p> <p>ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which PM emissions did not exceed 1.9 kg/Mg (3.8 lb/ton) of glaze sprayed.</p>
17. New or reconstructed sanitaryware spray machine glaze application	a. PM emissions must not exceed 1.6 kg/Mg (3.2 lb/ton) of glaze sprayed.	<p>i. The PM emissions measured using Method 5 of 40 CFR part 60, appendix A-3, over the period of the initial performance test, according to the calculations in § 63.8595(f) (2), do not exceed 1.6 kg/Mg (3.2 lb/ton) of glaze sprayed; and</p> <p>ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which PM emissions did not exceed 1.6 kg/Mg (3.2 lb/ton) of glaze sprayed.</p>
18. New or reconstructed sanitaryware robot glaze application	a. PM emissions must not exceed 1.1 kg/Mg (2.2 lb/ton) of glaze sprayed.	<p>i. The PM emissions measured using Method 5 of 40 CFR part 60, appendix A-3, over the period of the initial performance test, according to the calculations in § 63.8595(f) (2), do not exceed 1.1 kg/Mg (2.2 lb/ton) of glaze sprayed; and</p> <p>ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which PM emissions did not exceed 1.1 kg/Mg (2.2 lb/ton) of glaze sprayed.</p>

19. New or reconstructed floor tile spray dryer	a. Dioxin/furan emissions must not exceed 0.17 ng/dscm at 7% O ₂ .	i. The dioxin/furan emissions measured using Method 23 of 40 CFR part 60, appendix A-7, over the period of the initial performance test, do not exceed 0.17 ng/dscm at 7% O ₂ ; and
		ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which dioxin/furan emissions did not exceed 0.17 ng/dscm at 7% O ₂ .
20. New or reconstructed wall tile spray dryer	a. Dioxin/furan emissions must not exceed 0.12 ng/dscm at 7% O ₂ .	i. The dioxin/furan emissions measured using Method 23 of 40 CFR part 60, appendix A-7, over the period of the initial performance test, do not exceed 0.12 ng/dscm at 7% O ₂ ; and
		ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which dioxin/furan emissions did not exceed 0.12 ng/dscm at 7% O ₂ .
21. New or reconstructed floor tile press dryer	a. Dioxin/furan emissions must not exceed 0.19 ng/dscm at 7% O ₂ .	i. The dioxin/furan emissions measured using Method 23 of 40 CFR part 60, appendix A-7, over the period of the initial performance test, do not exceed 0.19 ng/dscm at 7% O ₂ ; and
		ii. You establish and have a record of the operating limits listed in Table 2 to this subpart over the 3-hour performance test during which dioxin/furan emissions did not exceed 0.19 ng/dscm at 7% O ₂ .
22. Existing, new, or reconstructed sanitaryware shuttle kiln.	a. Minimize HAP emissions.	i. Use natural gas, or equivalent, as the kiln fuel; and
		ii. Develop a designed firing time and temperature cycle for each product produced in the sanitaryware shuttle kiln. You must either program the time and temperature cycle into your kiln or track each step on a log sheet; and
		iii. Label each sanitaryware shuttle kiln with the maximum load (in tons) of product that can be fired in the kiln during a single firing cycle; and
		iv. Develop maintenance procedures for each kiln that, at a minimum, specify the frequency of inspection and maintenance of temperature monitoring devices, controls that regulate air-to-fuel ratios, and controls that regulate firing cycles.

Table 7 to Subpart KKKKK of Part 63--Continuous Compliance with Emission Limitations and Work Practice Standards

As stated in § 63.8620, you must demonstrate continuous compliance with each emission limitation and work practice standard that applies to you according to the following table.

For each...	For the following...	You must demonstrate continuous compliance by...
1. Tunnel or roller kiln equipped with a DIFF or DLS/FF.	a. Each emission limit in Table 1 to this subpart and each operating limit in Item 1 of Table 2 to this subpart for kilns equipped with DIFF or DLS/FF.	i. If you use a bag leak detection system, initiating corrective action within 1 hour of a bag leak detection system alarm and completing corrective actions in accordance with your OM&M plan; operating and maintaining the fabric filter such that the alarm is not engaged for more than 5 percent of the total operating time in a 6-month block reporting period; in calculating this operating time fraction, if inspection of the fabric filter demonstrates that no corrective action is required, no alarm time is counted; if corrective action is required, each alarm is counted as a minimum of 1 hour; if you take longer than 1 hour to initiate corrective action, the alarm time is counted as the actual amount of time taken by you to initiate corrective action; or performing VE observations of the DIFF or DLS/FF stack at the frequency specified in § 63.8620(e) using Method 22 of 40 CFR part 60, appendix A-7; and maintaining no VE from the DIFF or DLS/FF stack; and
		ii. Verifying that lime is free-flowing via a load cell, carrier gas/lime flow indicator, carrier gas pressure drop measurement system, or other system; recording all monitor or sensor output, and if lime is found not to be free flowing, promptly initiating and completing corrective actions in accordance with your OM&M plan; recording the feeder setting once each shift of operation to verify that the feeder setting is being maintained at or above the level established during the HF/HCl

		performance test.
2. Tunnel or roller kiln equipped with a WS.	a. Each emission limit in Table 1 to this subpart and each operating limit in Item 2 of Table 2 to this subpart for kilns equipped with WS.	i. Collecting the scrubber pressure drop data according to § 63.8600(a); reducing the scrubber pressure drop data to 3-hour block averages according to § 63.8600(a); maintaining the average scrubber pressure drop for each 3-hour block period at or above the average pressure drop established during the PM performance test; and
		ii. Collecting the scrubber liquid pH data according to § 63.8600(a); reducing the scrubber liquid pH data to 3-hour block averages according to § 63.8600(a); maintaining the average scrubber liquid pH for each 3-hour block period at or above the average scrubber liquid pH established during the HF/HCl performance test; and
		iii. Collecting the scrubber liquid flow rate data according to § 63.8600(a); reducing the scrubber liquid flow rate data to 3-hour block averages according to § 63.8600(a); maintaining the average scrubber liquid flow rate for each 3-hour block period at or above the highest average scrubber liquid flow rate established during the HF/HCl and PM performance tests; and
		iv. If chemicals are added to the scrubber water, collecting the scrubber chemical feed rate data according to § 63.8600(a); reducing the scrubber chemical feed rate data to 3-hour block averages according to § 63.8600(a); maintaining the average scrubber chemical feed rate for each 3-hour block period at or above the average scrubber chemical feed rate established during the HF/HCl performance test.
3. Tunnel or roller kiln equipped with an ACI system.	Each emission limit in Table 1 to this subpart and each operating limit in Item 3 of Table 2 to this subpart for kilns equipped with ACI system.	Collecting the carbon flow rate data according to § 63.8600(a); reducing the carbon flow rate data to 3-hour block averages according to § 63.8600(a); maintaining the average carbon flow rate for each 3-hour block period at or above the highest average carbon flow rate established during the Hg and dioxin/furan performance tests.

4. Tunnel or roller kiln intending to comply with dioxin/furan emission limit without an ACI system.	Each emission limit in Table 1 to this subpart and each operating limit in Item 4 of Table 2 to this subpart for kilns intending to comply with dioxin/furan emission limit without an ACI system.	Collecting the kiln operating temperature data according to § 63.8600(a); reducing the kiln operating temperature data to 3-hour block averages according to § 63.8600(a); maintaining the average kiln operating temperature for each 3-hour block period at or below the average operating temperature established during the dioxin/furan performance test.
5. Tunnel or roller kiln with no add-on control	a. Each emission limit in Table 1 to this subpart and each operating limit in Item 5 of Table 2 to this subpart for tunnel or roller kilns with no add-on control.	i. Performing VE observations of the stack at the frequency specified in § 63.8620(e) using Method 22 of 40 CFR part 60, appendix A-7; and maintaining no VE from the stack.
		ii. If your last calculated total facility maximum potential HCl-equivalent was not at or below the health-based standard in Table 1 to this subpart, collecting the kiln process rate data according to § 63.8600(a); reducing the kiln process rate data to 3-hour block averages according to § 63.8600(a); maintaining the average kiln process rate for each 3-hour block period at or below the kiln process rate determined according to § 63.8595(g) (1).
		iii. Collecting the kiln operating temperature data according to § 63.8600(a); reducing the kiln operating temperature data to 3-hour block averages according to § 63.8600(a); maintaining the average kiln operating temperature for each 3-hour block period at or above the average operating temperature established during the dioxin/furan performance test.
6. Glaze spray operation equipped with a FF.	Each emission limit in Table 1 to this subpart and each operating limit in Item 6 of Table 2 to this subpart for glaze spray	If you use a bag leak detection system, initiating corrective action within 1 hour of a bag leak detection system alarm and completing corrective actions in accordance with your OM&M plan; operating and maintaining the fabric filter such

	operations equipped with a FF.	that the alarm is not engaged for more than 5 percent of the total operating time in a 6-month block reporting period; in calculating this operating time fraction, if inspection of the fabric filter demonstrates that no corrective action is required, no alarm time is counted; if corrective action is required, each alarm is counted as a minimum of 1 hour; if you take longer than 1 hour to initiate corrective action, the alarm time is counted as the actual amount of time taken by you to initiate corrective action; or performing VE observations of the FF stack at the frequency specified in § 63.8620(e) using Method 22 of 40 CFR part 60, appendix A-7; and maintaining no VE from the FF stack.
7. Glaze spray operation equipped with a WS.	a. Each emission limit in Table 1 to this subpart and each operating limit in Item 7 of Table 2 to this subpart for kilns equipped with WS.	i. Collecting the scrubber pressure drop data according to § 63.8600(a); reducing the scrubber pressure drop data to 3-hour block averages according to § 63.8600(a); maintaining the average scrubber pressure drop for each 3-hour block period at or above the average pressure drop established during the PM performance test; and
		ii. Collecting the scrubber liquid flow rate data according to § 63.8600(a); reducing the scrubber liquid flow rate data to 3-hour block averages according to § 63.8600(a); maintaining the average scrubber liquid flow rate for each 3-hour block period at or above the average scrubber liquid flow rate established during the PM performance test.
8. Glaze spray operation equipped with a water curtain.	a. Each emission limit in Table 1 to this subpart and each operating limit in Item 8 of Table 2 to this subpart for kilns equipped with a water curtain.	Conducting daily inspections to verify the presence of water flow to the wet control system; and
		Conducting weekly visual inspections of the system ductwork and control equipment for leaks; and
		Conducting annual inspections of the interior of the control equipment (if

		applicable) to determine the structural integrity and condition of the control equipment.
9. Glaze spray operation equipped with baffles.	Each emission limit in Table 1 to this subpart and each operating limit in Item 9 of Table 2 to this subpart for kilns equipped with baffles.	Conducting an annual visual inspection of the baffles to confirm the baffles are in place.
10. Spray dryer	Each emission limit in Table 1 to this subpart and each operating limit in Item 10 of Table 2 to this subpart for spray dryers.	Collecting the operating temperature data according to § 63.8600(a); reducing the operating temperature data to 3-hour block averages according to § 63.8600(a); maintaining the average operating temperature for each 3-hour block period at or above the average operating temperature established during the dioxin/furan performance test.
11. Floor tile press dryer	Each emission limit in Table 1 to this subpart and each operating limit in Item 11 of Table 2 to this subpart for floor tile press dryers.	Collecting the operating temperature data according to § 63.8600(a); reducing the operating temperature data to 3-hour block averages according to § 63.8600(a); maintaining the average operating temperature for each 3-hour block period at or below the average operating temperature established during the dioxin/furan performance test.
12. Sanitaryware shuttle kiln	a. Minimize HAP emissions.	i. Maintaining records documenting your use of natural gas, or an equivalent fuel, as the kiln fuel at all times except during periods of natural gas curtailment or supply interruption; and ii. If you intend to use an alternative fuel, submitting a notification of alternative fuel use within 48 hours of the declaration of a period of natural gas curtailment or supply interruption, as defined in § 63.8665; and iii. Submitting a report of alternative fuel use within 10 working days after terminating the use of the alternative fuel, as specified in § 63.8635(g); and iv. Using a designed firing time and temperature cycle for each product

	produced in the shuttle kiln; and
	v. For each firing load, documenting the total tonnage of product placed in the kiln to ensure that it is not greater than the maximum load identified in Item 1.a.iii of Table 3 to this subpart; and
	vi. Following maintenance procedures for each kiln that, at a minimum, specify the frequency of inspection and maintenance of temperature monitoring devices, controls that regulate air-to-fuel ratios, and controls that regulate firing cycles; and
	vii. Developing and maintaining records for each shuttle kiln, as specified in § 63.8640.

Table 8 to Subpart KKKKK of Part 63--Requirements for Reports

As stated in § 63.8635, you must submit each report that applies to you according to the following table.

You must submit...	The report must contain...	You must submit the report...
1. A compliance report.	a. If there are no deviations from any emission limitations or work practice standards that apply to you, a statement that there were no deviations from the emission limitations or work practice standards during the reporting period. If there were no periods during which the CMS was out-of-control as specified in your OM&M plan, a statement that there were no periods during which the CMS was out-of-control during the reporting period.	Semiannually according to the requirements in § 63.8635(b).
	b. If you have a deviation from any emission limitation (emission limit, operating limit) during the reporting period, the report must contain the information in § 63.8635(d) or (e). If there were periods during which the CMS was out-of-control, as specified in your OM&M plan, the report must contain the information in § 63.8635(e).	Semiannually according to the requirements in § 63.8635(b).

2. A report of alternative fuel use.	The information in § 63.8635(g).	If you are subject to the work practice standards specified in Table 3 to this subpart, and you use an alternative fuel to fire an affected kiln, by letter within 10 working days after terminating the use of the alternative fuel.
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Table 9 to Subpart KKKKK of Part 63--Applicability of General Provisions to Subpart KKKKK

As stated in § 63.8655, you must comply with the General Provisions in §§ 63.1 through 63.16 that apply to you according to the following table.

Citation	Subject	Brief Description	Applies to Subpart KKKKK?
§63.1	Applicability.	Initial applicability determination; applicability after standard established; permit requirements; extensions, notifications.	Yes.
§63.2	Definitions.	Definitions for part 63 standards.	Yes.
§63.3	Units and Abbreviations.	Units and abbreviations for part 63 standards.	Yes.
§63.4	Prohibited Activities.	Compliance date; circumvention; severability.	Yes.
§63.5	Construction/ Reconstruction.	Applicability; applications; approvals.	Yes.
§63.6 (a)	Applicability.	General Provisions (GP) apply unless compliance extension; GP apply to area sources that become major.	Yes.

§63.6(b) (1) through (4)	Compliance Dates for New and Reconstructed sources.	Standards apply at effective date; 3 years after effective date; upon startup; 10 years after construction or reconstruction commences for section 112(f).	Yes.
§63.6(b) (5)	Notification.	Must notify if commenced construction or reconstruction after proposal.	Yes.
§63.6(b) (6)	[Reserved] .		
§63.6(b) (7)	Compliance Dates for New and Reconstructed Area Sources That Become Major.	Area sources that become major must comply with major source standards immediately upon becoming major, regardless of whether required to comply when they were area sources.	Yes.
§63.6(c) (1) and (2)	Compliance Dates for Existing Sources.	Comply according to date in subpart, which must be no later than 3 years after effective date; for section 112(f) standards, comply within 90 days of effective date unless compliance extension.	Yes.
§63.6(c) (3) and (4)	[Reserved] .		No.
§63.6(c) (5)	Compliance Dates for Existing Area Sources That Become Major.	Area sources that become major must comply with major source standards by date indicated in subpart or by equivalent time period (for example, 3 years).	Yes.
§63.6(d)	[Reserved] .		No.
§63.6(e) (1) (i)	Operation & Maintenance.	General Duty to minimize emissions.	No. See § 63.8570(b) for general duty requirement.
§63.6(e) (1) (ii)	Operation & Maintenance.	Requirement to correct malfunctions ASAP.	No.
§63.6(e) (1) (iii)	Operation & Maintenance.	Operation and maintenance requirements enforceable independent of emissions limitations.	Yes.

§63.6(e)(2)	[Reserved].		No.
§63.6(e)(3)	Startup, Shutdown, and Malfunction Plan (SSMP).	Requirement for startup, shutdown, and malfunction (SSM) and SSMP; content of SSMP.	No.
§63.6(f)(1)	Compliance Except During SSM.	You must comply with emission standards at all times except during SSM.	No.
§63.6(f)(2) and (3)	Methods for Determining Compliance.	Compliance based on performance test, operation and maintenance plans, records, inspection.	Yes.
§63.6(g)	Alternative Standard.	Procedures for getting an alternative standard.	Yes.
§63.6(h)	Opacity/VE Standards.	Requirements for opacity and VE standards.	No, not applicable.
§63.6(i)	Compliance Extension.	Procedures and criteria for Administrator to grant compliance extension.	Yes.
§63.6(j)	Presidential Compliance Exemption.	President may exempt source category.	Yes.
§63.7(a)(1) and (2)	Performance Test Dates.	Dates for conducting initial performance testing and other compliance demonstrations for emission limits and work practice standards; must conduct 180 days after first subject to rule.	Yes.
§63.7(a)(3)	Section 114 Authority.	Administrator may require a performance test under CAA section 114 at any time.	Yes.
§63.7(a)(4)	Notification of Delay in Performance Testing Due To Force Majeure.	Must notify Administrator of delay in performance testing due to force majeure.	Yes.
§63.7(b)(1)	Notification of Performance Test.	Must notify Administrator 60 days before the test.	Yes.
§63.7(b)(2)	Notification of Rescheduling.	Must notify Administrator 5 days before scheduled date of rescheduled date.	Yes.

§63.7(c)	Quality Assurance (QA)/ Test Plan.	Requirements; test plan approval procedures; performance audit requirements; internal and external QA procedures for testing.	Yes.
§63.7(d)	Testing Facilities.	Requirements for testing facilities.	Yes.
§63.7(e) (1)	Conditions for Conducting Performance Tests.	Performance tests must be conducted under representative conditions.	No, § 63.8595 specifies requirements.
		Cannot conduct performance tests during SSM; not a violation to exceed standard during SSM.	Yes.
§63.7(e) (2) and (3)	Conditions for Conducting Performance Tests.	Must conduct according to subpart and EPA test methods unless Administrator approves alternative; must have at least three test runs of at least 1 hour each; compliance is based on arithmetic mean of three runs; conditions when data from an additional test run can be used.	Yes.
§63.7(e) (4)	Testing under Section 114	Administrator's authority to require testing under section 114 of the Act.	Yes.
§63.7(f)	Alternative Test Method.	Procedures by which Administrator can grant approval to use an alternative test method.	Yes.
§63.7(g)	Performance Test Data Analysis.	Must include raw data in performance test report; must submit performance test data 60 days after end of test with the notification of compliance status.	Yes.
§63.7(h)	Waiver of Tests.	Procedures for Administrator to waive performance test.	Yes.
§63.8(a) (1)	Applicability of Monitoring Requirements.	Subject to all monitoring requirements in subpart.	Yes.

§63.8(a)(2)	Performance Specifications.	Performance Specifications in appendix B of 40 CFR part 60 apply.	Yes.
§63.8(a)(3)	[Reserved].		No.
§63.8(a)(4)	Monitoring with Flares.	Requirements for flares in § 63.11 apply.	No, not applicable.
§63.8(b)(1)	Monitoring.	Must conduct monitoring according to standard unless Administrator approves alternative.	Yes.
§63.8(b)(2) and (3)	Multiple Effluents and Multiple Monitoring Systems.	Specific requirements for installing and reporting on monitoring systems.	Yes.
§63.8(c)(1)	Monitoring System Operation and Maintenance.	Maintenance consistent with good air pollution control practices.	Yes.
§63.8(c)(1)(i)	Routine and Predictable SSM.	Reporting requirements for SSM when action is described in SSMP.	No.
§63.8(c)(1)(ii)	SSM not in SSMP.	Reporting requirements for SSM when action is not described in SSMP.	Yes.
§63.8(c)(1)(iii)	Compliance with Operation and Maintenance Requirements.	How Administrator determines if source complying with operation and maintenance requirements.	No.
§63.8(c)(2) and (3)	Monitoring System Installation.	Must install to get representative emission and parameter measurements.	Yes.
§63.8(c)(4)	CMS Requirements.	Requirements for CMS.	No, § 63.8600 specifies requirements.
§63.8(c)(5)	Continuous Opacity Monitoring System (COMS) Minimum Procedures.	COMS minimum procedures.	No, not applicable.
§63.8(c)(6)	CMS Requirements.	Zero and high level calibration check requirements.	Yes.
§63.8(c)(7) and (8)	CMS Requirements.	Out-of-control periods.	Yes.

§63.8(d)	CMS Quality Control.	Requirements for CMS quality control.	Yes.
§63.8(e)	CMS Performance Evaluation.	Requirements for CMS performance evaluation.	Yes.
§63.8(f) (1) through (5)	Alternative Monitoring Method.	Procedures for Administrator to approve alternative monitoring.	Yes.
§63.8(f) (6)	Alternative to Relative Accuracy Test.	Procedures for Administrator to approve alternative relative accuracy test for continuous emission monitoring systems (CEMS).	No, not applicable.
§63.8(g)	Data Reduction.	COMS and CEMS data reduction requirements.	No, not applicable.
§63.9(a)	Notification Requirements.	Applicability; State delegation.	Yes.
§63.9(b)	Initial Notifications.	Requirements for initial notifications.	Yes.
§63.9(c)	Request for Compliance Extension.	Can request if cannot comply by date or if installed BACT/LAER.	Yes.
§63.9(d)	Notification of Special Compliance Requirements for New Source.	For sources that commence construction between proposal and promulgation and want to comply 3 years after effective date.	Yes.
§63.9(e)	Notification of Performance Test.	Notify Administrator 60 days prior.	Yes.
§63.9(f)	Notification of VE/Opacity Test.	Notify Administrator 30 days prior.	No, not applicable.
§63.9(g) (1)	Additional Notifications When Using CMS.	Notification of performance evaluation.	Yes.
§63.9(g) (2) and (3)	Additional Notifications When Using CMS.	Notification of COMS data use; notification that relative accuracy alternative criterion were exceeded.	No, not applicable.
§63.9(h)	Notification of Compliance Status.	Contents; submittal requirements.	Yes.

§63.9(i)	Adjustment of Submittal Deadlines.	Procedures for Administrator to approve change in when notifications must be submitted.	Yes.
§63.9(j)	Change in Previous Information.	Must submit within 15 days after the change.	Yes.
§63.10(a)	Recordkeeping/Reporting.	Applicability; general information.	Yes.
§63.10(b)(1)	General Recordkeeping Requirements.	General requirements.	Yes.
§63.10(b)(2)(i)	Records Related to SSM.	Recordkeeping of occurrence and duration of startups and shutdowns.	No.
§63.10(b)(2)(ii)	Records Related to SSM.	Recordkeeping of failures to meet a standard.	No. See § 63.8640(c)(2) for recordkeeping of (1) date, time and duration; (2) listing of affected source or equipment, and an estimate of the volume of each regulated pollutant emitted over the standard; and (3) actions to minimize emissions and correct the failure.
§63.10(b)(2)(iii)	Records Related to SSM.	Maintenance records.	Yes.
§63.10(b)(2)(iv) and (v)	Records Related to SSM.	Actions taken to minimize emissions during SSM.	No.
§63.10(b)(2)(vi) through (xii) and (xiv)	CMS Records.	Records when CMS is malfunctioning, inoperative or out-of-control.	Yes.

§63.10(b)(2)(xiii)	Records.	Records when using alternative to relative accuracy test.	No, not applicable.
§63.10(b)(3)	Records.	Applicability Determinations.	Yes.
§63.10(c)(1) through (15)	Records.	Additional records for CMS.	No, §§ 63.8575 and 63.8640 specify requirements.
§63.10(d)(1) and (2)	General Reporting Requirements.	Requirements for reporting; performance test results reporting.	Yes.
§63.10(d)(3)	Reporting Opacity or VE Observations.	Requirements for reporting opacity and VE.	No, not applicable.
§63.10(d)(4)	Progress Reports.	Must submit progress reports on schedule if under compliance extension.	Yes.
§63.10(d)(5)	SSM Reports.	Contents and submission.	No. See § 63.8635(f) for malfunction reporting requirements.
§63.10(e)(1) through (3)	Additional CMS Reports.	Requirements for CMS reporting.	No, §§ 63.8575 and 63.8635 specify requirements.
§63.10(e)(4)	Reporting COMS data.	Requirements for reporting COMS data with performance test data.	No, not applicable.
§63.10(f)	Waiver for Recordkeeping/Reporting.	Procedures for Administrator to waive.	Yes.
§63.11	Flares.	Requirement for flares.	No, not applicable.
§63.12	Delegation.	State authority to enforce standards.	Yes.
§63.13	Addresses.	Addresses for reports, notifications, requests.	Yes.
§63.14	Incorporation by Reference.	Materials incorporated by reference.	Yes.
§63.15	Availability of Information.	Information availability; confidential information.	Yes.

§63.16	Performance Track Provisions.	Requirements for Performance Track member facilities.	Yes.
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[FR Doc. 2014-28125 Filed 12/17/2014 at 8:45 am; Publication
Date: 12/18/2014]